Toying With Obsolescence:
Pixelvision Filmmakers and the Fisher Price PXL 2000 Camera
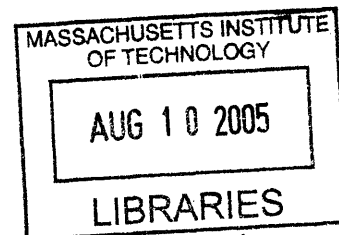
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Pixelvision Filmmakers and the Fisher Price PXL 2000 Camera

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Submitted to the Department of Comparative Media Studies in Partial Fulfillment of the Requirements for the Degree of Master of Science in Comparative Media Studies at the Massachusetts Institute of Technology.

Abstract:

This thesis is a study of the Fisher Price PXL 2000 camera and the artists and amateurs who make films and videos with this technology. The Pixelvision camera records video onto an audiocassette; its image is low-resolution, black and white. Fisher Price marketed the PXL 2000 to children in 1987, but withdrew the camera after one year. Despite its lack of commercial success, the camera became popular with avant-garde artists, amateur film- and videomakers and collectors, sparking a renewed interest in the obsolete camera. An online community has built up around the format, providing its members with information on how to modify the camera to make it compatible with contemporary digital equipment. Although Pixelvision garners little recognition from mainstream culture, the camera's hipster cachet and perceived rarity has driven up prices in the community and in auctions.

This thesis examines the position of the PXL 2000 camera within the history of moving image technology, and in the context of today's digital video equipment. How has this obsolete video camera made the transition from analog to digital? The thesis also explores Pixelvision's position in the cultural hierarchy of media, as well as the motivations of artists and users who are creating with the camera today, as it moves further and further into its obsolescence.

Thesis Supervisor: William Uricchio
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Contents

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I truly enjoyed researching this topic, and am grateful to have had the opportunity to conduct interviews with Pixelvision artists and Pixelvision fans. I would like to thank the interviewees, who were generous with their time and their insights, especially those who shared their films and videos with me. Gerry Fialka, curator of the PXL THIS Festival, was incredibly helpful in providing names and contact information for members of the Pixelvision community. Gerry came to MIT in the spring of 2005 for a memorable PXL THIS event. I would also like to acknowledge Laurie Oravec and Debbie Lerner at Fisher Price, who took the time to answer questions about this curious relic of toy culture.

Over the past two years, I have come to value the friendship, support and opinions of my seven classmates in CMS '05. Both in and out of class, and during our weekly thesis meetings, we engaged in far-flung conversations related to our academic lives, personal lives and all kinds of media.

My biggest and most sincere thanks of all go to Michael Kilkelly for sticking with me through this, from beginning to end.

Introduction: What is Pixelvision?

A black-and-white, low-resolution video format with a distinctive, dream-like quality, Pixelvision holds an intriguing place at the intersection of art and amateur expression, of low art and high art, of obsolescence and timelessness. The Fisher Price PXL 2000 camera survived market failure, and in the past twenty years, it has taken on multiple identities as a toy, an experimental art tool, a technological curiosity and a collector's item. The camera has become a cult object, and these multiple identities enhance its "cult" factor among those who seek it out. How do these identities affect the perceived value of the camera, almost a generation after its failure on the market? How do they shape the works created by artists working in this format?

As a video format Pixelvision is an anomaly in an age of digital, prosumer cameras. PXL 2000 cameras are valued by a small community of artists, filmmakers, hipsters and inveterate amateurs. Almost twenty years after they were taken off the market, the cameras are sought after and still in use; many of them have been modified to make them compatible with today's digital equipment. The PXL 2000 has a small but devoted

following, and Pixelvision images are closely associated with the independent film and video scene in the United States.

Released by Fisher-Price in 1987, the PXL 2000 camera was marketed to older children and adolescents; it was in production for about one year.[1] For anyone interested in video in the late 1980s, Pixelvision represented a cheap alternative to the consumer video formats of the time, priced at $1000 and up.[2] The innovation behind Pixelvision was the technology: video was recorded onto a standard audiocassette that could be played back through the camera and viewed on a television or monitor. Unfortunately, its sales were not robust, probably because it sold for over $100, too much to charge for a "toy" in 1987. For whatever reason, the camera never caught on with its target demographic of children, and was viewed as a market failure.

Unbeknownst to Fisher Price, or to James Wickstead, the inventor of the PXL 2000, the camera became quite popular with filmmakers and visual artists in the late 1980s, many of whom began experimenting with the camera while it was still on the market. The most famous of these artists is undoubtedly Sadie Benning, a teenager who began making Pixelvision

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[1] The PXL 2000 was available at toy stores in 1989, the year after Fisher Price stopped producing the camera.
[2] The Consumer Reports Buying Guide from 1989 lists 25 camcorders ranging in price from $1249 to $2000. The listing includes VHS, VHS-C, and 8mm video formats.

video diaries in her bedroom at the age of fifteen. She went on to win a grant from the Rockefeller Foundation in 1993, and is seen as a notable figure in experimental video of the 1990s. As the work of other artists and filmmakers became visible across the nation, the PXL 2000 developed a cult following. It has inspired PXL THIS, an annual Pixelvision film festival that travels around the country, Pixelporn, a one-time online festival of pornographic Pixelvision shorts, and has even found its way into 35mm commercial films such as Richard Linklater's *Slacker* (1991) and Michael Almereyda's *Hamlet* (2000).

The look of a PXL 2000 recording is grainy, pixilated and sometimes blurry; a black and white image surrounded by a thick black frame. Artists were first attracted to the format because of its low cost and its simplicity, but most importantly for its look. Wickstead's decision to use a standard audiocassette as the image support determined the basic aesthetics of the image. Due to the limited information capacity of an audiocassette, the image was constrained to low-resolution black and white. A reduced image size of 60 x 90 pixels and a below-standard frame rate of 15 frames per second allow for less than ten minutes of video to be recorded on a sixty-minute audiocassette. Whereas regular NTSC video has 480 active lines of resolution, Pixelvision has less than 100. Also, Pixelvision has a very slow screen refresh rate, which contributes to the dithered, dreamy

look of the image.[3] To compensate for the reduced image size, the Pixelvision creators designed a black frame around the image, reminiscent of the black masking around a traditional movie screen. The black frame adds to the "artistic" look of the image.

Pixelvision is the antithesis of the high-resolution, color video image that audiences most often see on television and in Hollywood films. Since the advent of the moving image, consumer technology has followed advances in professional equipment, focusing on ever more "true-to-life" portrayals of the world around us. In this manner, the vast majority of amateur moving image formats have been representational in their deployment by average consumers. The stereotypical home movie contains shots of a birthday party or Christmas morning; it is not an experimental short film. With its crisp image and vibrant color, Super 8 film is an exemplary medium for "capturing the moment;" Super 8 enjoyed wide success as a home movie format, although it is easily manipulated to produce an abstract or expressionistic image. The cascading video formats of the 1980s and 1990s, from Hi-8 to miniDV, were all marketed as "state of the

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[3] Standard NTSC video technically has 525 lines of resolution, but only 480 are active at any time. At 15 fps, Pixelvision has only one field per frame and refreshes the image fifteen times per second. At 30 fps, standard NTSC video is interlaced, which means that each frame represents two fields, resulting in an image that refreshes sixty times per second. Also, Pixelvision has about 2,000 pixels of visual information, as compared to broadcast television, which has over 150,000.

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art," able to capture life at ever-higher resolution.[4] The Pixelvision format, however, does not adhere to the cult of photographic fidelity; it does not capture life as we "see" it, nor as it is represented to us by broadcast television.

Pixelvision occupies an interesting niche, in that it is a format that challenges the reigning cultural aesthetic of broadcast video, as well as the assumptions of what kinds of images are made in the home. To many artists, Pixelvision is an anomaly— it is not video, nor is it film. It has been adopted at various times by video artists and filmmakers, but championed by neither community. It is the bastard child of video, recorded onto an audiocassette. Technically, Pixelvision can be described in video terms, because it records images onto magnetic tape. Aesthetically, many artists consider Pixelvision to be closer to film. There is a texture to Pixelvision images that conventional video lacks; Pixelvision has a visual identity that conventional video cannot achieve. Video, as a medium, has always been overshadowed by film and by television, and has struggled with a resulting identity crisis. Theorists have debated the specificity of the medium, and artists such as Hollis Frampton have mused about the inherent differences in film and video art. In *There's No Place Like Home Video*, James Moran

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[4] During the transition from Super 8 to video in the 1980s, video was technically inferior to Super 8 film in terms of image quality.

discusses the identity of video and concludes, "The specificity of video is precisely that it lacks one."[5]

Video practice covers a large swath of image making, including avant-garde video art, home use and documentary/social activism. Until recently, this heterogeneous video practice has not had the same impact on popular consciousness that filmmaking has had. This is reflected in our language, which does not reflect medium specificity in terms of film and video, and cannot be expected to change as quickly as our technology does. This is important to the discussion of Pixelvision in my thesis. Pixelvision is captured on audiocassette until it is transferred to video. Sometimes this video is then transferred to film. These days, Pixelvision images exist not as video, but as digital files. Many Pixelvision artists identify as filmmakers and refer to their work as films. Perhaps they should identify as videomakers or videographers or video artists, but some of them shoot with film as well. Should they use the term videomaker when shooting with video and filmmaker when shooting with film? What if they mix film and video in their work? Popular usage still reflects the twentieth-century dominance of film in our culture. As film gives way to digital video, which will in turn give way to yet another digital image medium, it remains to be seen how language will adjust. My discussion will include some slippage between the terms "video" and "film." In popular usage,

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[5] Moran, p. 13.

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filmmaking often refers to the art of composing and editing moving images, regardless of medium. The majority of people I interviewed referred to their Pixelvision pieces as films. The slippage in terminology within my thesis reflects not only popular usage but also the ambiguity of Pixelvision as a format.

Because of its inherent difference from conventional video, the PXL 2000 camera may never have been destined for the mainstream. But while the image may have been too abstract for some children and families, it was perfect for artists and other filmmakers, who immediately recognized Pixelvision's ability to capture dreamy, abstract moving images with the simplicity of a point-and-shoot camera.

In my thesis, I will focus on the journey of the PXL 2000 from toy camera to failed technology to cult object, and the shifting identities that this entails. Because Pixelvision is often considered an anomalous format, it is important to situate it within the larger history of moving image technology. Most texts concerning the history of film or video art dismiss Pixelvision as a footnote, if they mention it at all. And though I would agree that it is a minor format, and relatively obscure, I find it to be a fascinating case study of an evolving media practice outside of the mainstream, with elements of grassroots community, participation and avant-garde sensibility. Pixelvision bridges the divide between analog and digital at a

time when these two types of media seem almost irreconcilable in the film and video world. Instead of abandoning the obsolete technology, Pixelvision practitioners have brought the camera, and its technological quirks, into the digital realm.

So what are some of the multiple identities of the PXL 2000 and how can we go about defining them? Trevor Pinch and Wiebe Bijker present a viable approach to the study of technology from a sociological perspective, and my research into Pixelvision has been informed by their writings on the social construction of technology. Pinch and Bijker believe that the study of a technological artifact must focus on "the social groups concerned with the artifact and the meanings that those groups give to the artifact…"[6] Thus in the study of Pixelvision, it is important to look at the way the format has circulated among different groups including children, adults, artists, amateurs, collectors and technology fans. In this way, we can gain a sense of the myriad social perspectives concerning one artifact that has yet to achieve "closure," or a stable meaning across a wide spectrum of society.[7]

Pixelvision's most prominent dual identity is that of children's toy and artist's tool. In chapter one, I will explore Pixelvision as a toy and as an

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[6] Pinch and Bijker, "The Social Construction of Facts and Artifacts," 30.
[7] Pinch and Bijker, "The Social Construction of Facts and Artifacts," 44.
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amateur format destined for the home. I will discuss how this identity

affects the way that adults and children use the camera both as a

traditional means of documenting daily life and as a tool to make artistic

short videos. While the PXL 2000 was created as a toy and was targeted

to children in the home, it had some pretensions to art even during the

invention process. Wickstead has said that he was inspired by his love of

black and white photography and cinema, including the work of Ingmar

Bergman: "black and white photography... has always been, to me, very

powerful, very gorgeous, and in the hands of the right person, a

tremendous tool."[8]

Although it may have been difficult to imagine in 1987, the camera

eventually did make it into the hands of serious artists, as a tool for

experimentation and self-expression. How did a nearly obsolete children's

toy generate so much interest? In her book *Reel Families*, Patricia

Zimmerman quotes a 1982 article from *Popular Photography* in which the

author, Leendert Drukker, encourages amateur photographers to use toy

gadgets as tools to extend their filmmaking boundaries: "The distinction

between toys and professional tools is largely a state of mind and

sometimes a matter of distribution."[9] It was largely artists who saw the

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[8] Wickstead, interview, *The Art of Pixelvision*. Wickstead mentions Ingmar Bergman in Revkin, "As Simple as Black and White."
[9] Zimmerman, *Reel Families*, 157, quoting Drukker, 46.

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potential in the toy, and they exploited the PXL 2000 for its aesthetic and cultural value.

Soon after its release on the commercial market, Pixelvision did indeed become an icon of the cultural underground and video art scene. Yet the current activity surrounding the Pixelvision movement is not due to its being recognized as an established "art" form; it is due to the energy created by artists and amateurs who are using the format as a means of self-expression outside of the commercial media marketplace. These Pixelvision users are creating art, although some of them might not identify themselves as "artists," or be recognized as such by the art establishment. This combination of artistic creation and amateur enthusiasm make this otherwise marginal format an interesting site of grassroots cultural activity. In her history of amateur film, Zimmerman theorizes that the amateur filmmaking scene has always served as a source of inspiration to both professionals and the avant-garde. Chapter two of this thesis explores Pixelvision's "career" in the art scene and in Hollywood. In the early 1990s, Pixelvision became known as a hip, avant-garde video format, and later as a marker of underground authenticity in commercial 35mm films. Pixelvision's iconographic status and "indie cred" could have made it an easy mark for appropriation by mainstream popular culture, but it has always remained marginal and obscure. I will analyze instances of appropriation in commercial films, as well as some of the

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negative perceptions about the format in artistic and professional circles, in order to show how the camera is marked by a certain amateur sensibility that is difficult to shake.

Both as a toy and as a tool, one of the most endearing traits of the PXL 2000 camera lies in its utter simplicity and perceived accessibility. Users, whether children or adults, can simply point, shoot and record onto audiocassette. The camera comes equipped with a tiny but exceptional wide-angle lens that allows for good depth-of-field as well as automatic focus and automatic light adjustment. Compared with the myriad adjustments possible in conventional video cameras, the user can do little to alter or adjust the image recorded by the PXL 2000 camera. As filmmaker Michael Almereyda says, "everything is equally out of focus, which means everything's really equally in focus."[10] In some ways, user efforts with the PXL 2000 are better focused on self-expression within the limits of the format rather than the technical conventions of shooting standard video.

Chapter three deals with competing perceptions of the camera as an accessible video tool and as an underground cult object and collector's item. As twenty-first century digital tools become more and more ubiquitous, can Pixelvision survive as a viable format? One wonders if the

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[10] Revkin, "As Simple as Black and White."

camera's status will survive the passing of the generation that knew it as a children's toy. To what degree is the camera tied up in a pop cultural moment? If so, which one? How long can it survive its own obsolescence? While Pixelvision has shown up in a few commercial 35mm films, the Pixelvision aesthetic has not been popularized by commercial media makers in the same way that the Super-8 aesthetic has in the past few years.

The issue of obsolescence inevitably comes to the fore when discussing the technology of the PXL 2000 camera. As a proprietary system that was on the market for only a few years, the number of PXL 2000 cameras in existence is limited— about 400,000 cameras were produced.[11] At some point, the PXL 2000 cameras may break down beyond the ability of owners to fix them, and the cameras will become difficult to find. The advent of digital technology already threatens the viability of the audiocassette tape, which is now considered to be a legacy format by most audiovisual archivists. The camera's analog outputs already require some modification in order to work with today's digital equipment. If the cameras become too expensive and difficult to work with, they will become retro objects, belonging to the realm of collectors and museums instead of artists and regular people.

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[11] Wickstead, interview, *The Art of Pixelvision*.

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Fisher-Price was not the first company to market a camera to children, nor was it the first to invent a proprietary video format strictly for the amateur market. Although it is a proprietary format, the survival of Pixelvision has never been dependent on the support of Fisher Price. One of the most interesting developments concerning the Pixelvision technology has occurred in the years since the camera was taken off the market. As artists adopted the camera, so did amateurs and lovers of analog technology. A small but devoted community, operating on the Internet and through the PXL THIS Festival, has sprung up around the camera, and is quite active. In exploring the participatory nature and practices of the Pixelvision community, chapter four explores the active online culture built up around the camera, providing the a view that runs counter to the discussion of obsolescence and fetishization issues in chapter three.

Citing Howard Becker in his book titled *Art Worlds*, one could position this community of Pixelvision users as its own art world, separate from the larger art world of professional filmmaking or video art. Becker describes an art world as consisting not only of artists, but also of audience members and support personnel who provide material support to the work. Through their participation in this art world, these individuals refer in common "to a body of conventional understandings embodied in common

practice and in frequently used artifacts."[12] In this manner, Pixelvision

owners and users trade tips and tricks on an Internet message board, and

Web sites give advice on modifying cameras to facilitate editing in digital

formats. A few Pixelvision "gurus" offer their services in restoring and

modifying the cameras, adding features and modifications to help with

conversion to digital video. The message boards and modification gurus

provide technical support to Pixelvision users, while the Internet, the PXL

THIS Festival and other small, independent film and video festivals

represent a means of distribution to a wider community of users and fans.

This DIY (do-it-yourself) ethic of the Pixelvision community places them

squarely within the tradition of amateur film and the Super 8 film

movement of the 1970s and 1980s. Their adoption of Pixelvision as a non-

standard and unsupported video format sets them apart from mainstream

artistic practices and the conventions of the professional filmmaking

industry. Again, quoting Becker:

> "Breaking with existing conventions and their
> manifestations in social structure and material artifacts
> increases artists' trouble and decreases the circulation
> of their work, but at the same time increases their
> freedom to choose unconventional alternatives and to
> depart substantially from customary practice."[13]

This departure from what Becker terms as "customary practice" has

allowed for great breadth and variety in Pixelvision videomaking. But

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[12] Becker, Howard, *Art Worlds*, p. 34.
[13] Becker, Howard, *Art Worlds*, p. 34.

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within the realm of Pixelvision practice, what standards and criteria have evolved in the production of Pixelvision videos? Chapter five is an exploration of the evolving practices and aesthetics of Pixelvision users. To adopt a term that is a key to Becker's theory of art worlds, what are the "conventions" that have passed down to today's users, some of whom may not be familiar with the early, groundbreaking Pixelvision works? What are the criteria by which an evolving community judges the videos, and what can these videos tell us about the technology as it is being modified and adapted to current technological standards?

Finally, since the effect of the transition to digital is the issue that looms large over this case study of Pixelvision: what changes has digital wrought on user practices and works being made with the PXL 2000, the ultimate lo-fi analog camera? How has the camera survived its own obsolescence and sparked such devotion among a small but committed community? What can the camera's development, as well as its past and present identities, tell us about the future trajectory of the format, and the identity of other analog formats in the digital era?

Methodology

The Pixelvision phenomenon raises questions about aesthetics, technology, art, obsolescence and amateur expression. These areas are worthy of exploration in light of Pixelvision's continued endurance beyond

its market failure. I have pursued these questions by combining

ethnographic and textual approaches in this study. I conducted in depth

interviews by telephone and email with artists, curators and people who

make modifications to the technology, asking them questions about their

relationship to the Pixelvision, why they create or work with it and how

their perspective on the camera may have changed over time. I

supplemented these interviews with close observation of online

interactions among members of the Pixelvision community from the year

2000 to the present day.[14]

The ethnographic slant of the research is combined with some close

analysis of selected films and videos, many of them well known within the

Pixelvision community. I tried to analyze the films in order to discover what

they could tell us about Pixelvision filmmakers and the PXL 2000

technology. Where do Pixelvision filmmakers place themselves within the

cultural hierarchy of the film and video world? How do they use the PXL

2000 camera, and can analysis of their aesthetic choices give us clues to

the future of the format?

The bulk of my research consisted of interviews with twelve artists who

have made works in Pixelvision and shown them in the PXL THIS festival.

Some of these artists are currently working with the PXL 2000 camera,

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[14] The PXL-2000 Message Board and the Pixelvision Mailing List have archived their
postings back to 2000 and 2001 respectively.

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while others have not shot with the camera in several years. The interviewees are comprised of eight men, three women and one young girl. Four or five of the twelve artists are established to varying degrees, and tied to the experimental video art scene. Some have screened films, both in Pixelvision and in other formats, at venues like the Whitney Museum and the Museum of Modern Art in New York. One of the artists considers himself a committed amateur. Two of the artists are currently enrolled or have recently completed MFA (Master of Fine Arts) programs in filmmaking. Several of the artists make their living teaching photography or media arts. One artist is a still photographer and another works in the Hollywood film industry. The young girl is nine years old and enjoys making shorts with the PXL 2000 as well as digital video.

Whether or not these users actually identify as artists, I have chosen to label them as such. They are making films and videos, and screening them before a wider audience. There is artistic intent in their choices. In order to explore their attraction to and exploitation of the Pixelvision image, I asked questions that were intended to shed light on the relationship between artist and format: How do the camera's technical limitations affect artistic expression? What is the camera's pop culture status and how does it affect the way artists approach it as a tool? What is their opinion of this analog camera's future in the digital age? Why are these filmmakers and artists drawn to the format, and how long can the Pixelvision movement

sustain itself? These questions focus mainly on the creation and distribution of the films because, in true DIY fashion, Pixelvision artists usually assume responsibility for both. The artists showed diverse attitudes toward creation, media and the very definition of art. Their interviews are complemented by analysis of selected films.

I also conducted interviews with a camera collector, a festival curator, an archivist and three people who modify and repair PXL 2000 cameras. Another interesting perspective emerged from an interview with a woman who owned the camera as a child, but no longer shoots footage in Pixelvision. These interviews shed light on the workings and development of the Pixelvision community— the less visible part of the Pixelvision art world made up of amateur videomakers and technology fans. I asked these interviewees about the status of Pixelvision in the larger film and video world, as well as their own feelings about the format. I asked the people who modify the technology about their modification and repair practices, and the support role they play within the Pixelvision community.

All of the interviews were very rich, and I was impressed by the thoughtful analysis and strong opinions of my interviewees. For the most part, they welcomed the opportunity to describe their feelings about Pixelvision, and to articulate their own theories about the format. These theories and ideas arising from these interviews resonate with Thomas McLaughlin's analysis

of vernacular theory.[15] McLaughlin posits that the people involved in a cultural practice can analyze its conventions and finer details in such a way that new theoretical perspectives emerge. These practitioners may not see themselves as theorists, yet their everyday practice leads them to think extensively about the subject at hand. In my own research, I found several of my interviewees to be perfectly at home theorizing about the nature of Pixelvision, art and aesthetics, while others preferred to avoid theory while describing their own practices and experiences. New ideas emerged from both types of interview. Some of these opinions and theories may be incompatible, yet their very diversity and their areas of overlap shed light on the status of the Pixelvision image in the twenty-first century. The interviews and analysis provide us a glimpse of the shifting identities of the PXL 2000 and how this subculture informs the wider world of independent and experimental filmmaking.

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[15] McLaughlin, *Street Smarts and Critical Theory*, 4 – 30.

Chapter 1: The First Toy Video Camera

Fisher Price introduced the PXL 2000 camera in 1987 at the International

Toy Fair in Manhattan, an annual trade show for the American toy

industry. In just under a year, the camera progressed from a pencil and

paper concept drawing shopped to Fisher Price by inventor James

Wickstead, to a fully-operational plastic camera sold along with

accessories including a monitor, bipod and audio cassettes. The

complete Pixelvision outfit initially sold for $179; the price was later

reduced in an effort to boost sales of the "toy" camera among its target

demographic: children ages 8 and older.[1]

According to Wickstead, the PXL 2000 camera was modeled on the Sony

Walkman as a simple, portable electronic device. In describing the design

process, Wickstead points out the careful thought and research put

towards the goal of capturing a video image on a standard

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[1] Wickstead, interview, *The Art of Pixelvision*. Wickstead discusses the initial price of the camera. The Pixelvision box gives no maximum age limit recommendation. It says only that the camera is not recommended for children under the age of eight.

audiocassette.[2] During the course of the design process, the engineers

focused great energy on the challenge of creating the camera; everything

from the wide-angle lens to various elements of the image was the result

of detailed planning. Wickstead and his team were creating a toy, but

they were very serious about their investigation into the technology: they

commissioned the black-and-white CCD imager from the Sanyo

Corporation in Japan; a firm in Cambridge, MA designed the camera's

infinity-focus lens to Wickstead's specifications.[3] The camera's cheap

plastic case and low-res image belie the careful engineering behind it.

An experienced inventor, Wickstead and his firm had a solid track record

in the medical and electronics fields, as well as some experience in the

toy industry. He brought the same focus to toys as he did to inventions in

other fields. Yet it was with some reluctance that he initially began

working in the field of toys and games in the late 1970s. In a later

interview, he was quoted as saying, "I was kind of snobbish [at the

time…and] I thought, 'Real professionals don't do toys.'"[4] Wickstead's

initial ambivalence about inventing for the toy industry seems almost

prophetic in light of the PXL 2000 camera's trajectory from toy to artist's

tool; Pixelvision is the only Wickstead invention to garner a cult following

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[2] Wickstead, interview, *The Art of Pixelvision*.
[3] Wickstead, interview, *The Art of Pixelvision*.
[4] Revkin, "As Simple as Black and White."

among adults. "Real professionals don't do toys" is a quote that sums up Wickstead's entry into the toy field as well as attitudes towards Pixelvision in some corners of the media world. But the PXL 2000 is a working camera first and foremost, which may account for its longevity, despite a failure on the toy market.

The PXL 2000: Object on the Margins

The PXL 2000 camera may have been the first video camera marketed to kids, but it falls into a long line of optical toys and moving image devices created for children, ranging from the Zoetrope, released by the Milton Bradley Company in the 1860s, to the Spider Man 2 Wireless Video Camera, which is currently on the market in 2005. Some of these toys, like the View-Master Viewer (still marketed by Fisher Price today), have endured longer than others; many of them remain objects of fascination to both children and adults, often ending up as collector's items when they are no longer current as toys.

In a series of essays from 1928, Walter Benjamin remarked on a growing cultural interest in toys and their historical significance. While visiting an exhibition of toys at a Berlin museum, Benjamin remarked on the presence of both toys and items he classified as "objects on the margins," including optical displays such as 19th century peep shows and

advertisements for dioramas and panoramas.[5] Benjamin does not dwell

on these "objects on the margins," yet he is clear about their fascination

as entertainments for both children and adults. In the nineteenth century,

many optical toys were invented primarily as devices serving to advance

scientific and technological knowledge, and then later marketed as

entertainment. In this manner, they have always bridged a gap between

toy and scientific curiosity, between play and the worlds of art and

science. The PXL 2000 camera is most definitely an "object on the

margin," in the above sense, and in other, more contemporary ways that

we will discuss in later chapters. The camera was marketed as a toy, but

adults find it appealing as an artists' tool and as a technological curiosity.

When Benjamin wrote his essays in 1928, he also explored the culture of

play, and how toys are steeped in and informed by the broader adult

culture that surrounds them. Benjamin even noted that toys are often

simple imitations of adult tools: "Primitive technology combined with

cruder materials imitates sophisticated technology combined with

expensive materials."[6] With reference to optical toys and devices, we can

complicate the relationship outlined by Benjamin by adding yet another

level. Many of these optical devices can be seen to have developed on

three levels, targeted respectively to children as toys, to adult amateurs in

[5] Benjamin, "Old Toys," 98. Benjamin specifically references the 1928 Toy Exhibition at
the Märkisches Museum and Karl Gröber's 1928 book titled, *Children's Toys from Olden
Times: A History of Toys* in a series of three articles on toys including "Old Toys," "The
Cultural History of Toys," and "Toys and Play."
[6] Benjamin, "Toys and Play," 119.

the home, and to professionals. None of these categories is strictly delineated, but they tend to line up on a continuum defined by sophistication, complexity and price, with simple toys at one end and professional equipment at the other. The sturdy magic lantern apparatus used by a traveling showman in the nineteenth century was not the same as the small magic lantern, lit by a single candle, enjoyed by some boys and girls in their homes. The parents of these children probably owned a model that fell in between these two extremes for entertaining small groups in the home. This continuum still holds true with today's camera and video equipment, and it applies to the video market at the time of Pixelvision's release. I will further explore Pixelvision's place in this continuum of toy, amateur and professional in chapter two.

Consuming Images or Producing Them?

Although it failed on the market, the PXL 2000 may be one of the more interesting devices in the succession of moving image toys due to the sophistication of its technology. Looking back to the nineteenth century, traditional optical and film toys were designed to display images through projection or through proprietary viewing devices. Toy magic lanterns and View-Master Viewers belong to different centuries, but the principle is similar: both provide the viewer with images to consume, whether on glass slides or paper wheels. The PXL 2000 is not just a viewing device.

It is a camera, and as such, it has parallels in the world of still

photography, where there is a long tradition of marketing cameras to

children as toys. In fact, the community that has built up around the PXL

2000 camera is analogous to the toy camera movement devoted to the

Diana and Holga toy photo cameras produced in the 1960s.[7]

Perhaps the PXL 2000's earliest direct ancestor is the Kodak Brownie

Camera, put on the market in 1900 for $1. The Brownie was a simple

camera, with few controls and a lens that captured subjects in focus from

close range to 100 feet away. It was easy to use, and became the camera

of choice among amateur photographers in the early part of the twentieth

century. Kodak made children the focus of its marketing campaign for the

Brownie, positioning it as a children's toy while fully insisting on its

technological capability for adult customers.[8] When comparing the stories

of the Brownie camera and the PXL 2000, price and accessibility emerge

as two points of comparison. The Brownie was not inexpensive for its

time, just as the price of the PXL 2000 was considered high for a

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[7] West, *Kodak and the Lens of Nostalgia*, 74 – 108. In this chapter, West discusses Kodak's strategies to market the Brownie camera to children; a community of adult artists, amateur practitioners and collectors has built up around the Holga and Diana toy cameras, and their quirky black and white images. There are other instances of still cameras created for and marketed to children, but the toy photo movement revolves around the Diana, the Holga and their analogues. Some members of the toy camera movement specifically exclude the Brownie from consideration in this movement. www.toycamera.com is one of many websites devoted to toy photography community, which seems to be larger and more active than the Pixelvision community (see chapter four).

[8] West, *Kodak and the Lens of Nostalgia*, 88. West includes a quote from the Kodak marketing campaign, selling the Brownie as "much more than a toy—it is a practical and efficient instrument."

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children's toy in 1987, a point that I will return to later in this chapter. It is also possible that Kodak was in a better position to market its Brownie camera to both children and adults, whereas the Fisher Price label may have cornered the PXL 2000 in a sort of toy ghetto, invisible to many adult consumers.

Until recently, amateur film and video were always relatively expensive compared to still photography. Given the complexity of the equipment and the cost of film and processing, movie cameras were not often marketed as toys in the manner of still cameras. Toy projectors were marketed to children in the home movie era, but were not twinned with a toy camera to produce images. Motion picture film was precious, and cameras too expensive to be used as toys. In most families, home movie cameras were in the hands of parents and older children, while younger children played in front of the lens. A reel of regular 8 or Super 8 film only lasts about three minutes, and then must be sent out for processing. The re-useable cassettes of the video medium were more promising in terms of play, but in the 1980s video was still far too expensive. The PXL 2000 camera, however, brought video within reach—it was simple to operate, it used re-recordable audiocassettes and the image could be played back immediately. By this logic, Pixelvision made sense as a children's toy.

After the initial investment in the camera, Pixelvision was a relatively

inexpensive format for kids; audiocassettes and batteries were the basic

necessities for shooting. Yet in many ways, the PXL 2000 was more

sophisticated than the toy video cameras recently marketed to children,

including the Barbie Videocam, the Hot Wheels Videocam and the

Spider-Man 2 Video Camera.[9] These wireless video cameras are

designed for use within range of a television and VCR—the image is

transmitted from the camera to the TV/VCR by means of a wireless

receiver. While these Videocams produce a higher resolution image than

Pixelvision, they are not self-contained units and do not capture any

images in the camera itself. They cannot be used outside, unless the

TV/VCR are somehow brought within camera range. These videocams

are similar to the low-end surveillance cameras currently on the market,

just branded differently in bright colors and franchise logos. Like the PXL

2000 camera, collectors will pick up these wireless videocams for a

variety of reasons, and artists and amateur filmmakers may be drawn to

them in order to experiment with the low-res image, or to mine the

cultural significance of these toys and their brand associations.[10] These

video cameras seem have sustained a presence on the market longer

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[9] The Barbie Videocam Wireless Video Camera was released by KIDdesigns and was on the market in 2003. The Hot Wheels 'X' Treme Cam Wireless Video Camera and the Kids Station Spider-Man 2 Wireless Video Camera sold for approximately $100 in April 2005.
[10] A recent (March 2005) discussion on the PXL 2000 message board compares the relative merits of Pixelvision and the Hot Wheels camera for a specific installation art project: <http://groups.yahoo.com/group/pxl2000/message/946>.

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than the PXL 2000 ever did, but they do not represent a format unto themselves, nor do they appear to have attracted the same devoted following that Pixelvision has.

Toy or Tool?

Many artists are drawn to Pixelvision for the quality of the image, and not for its status as a toy video camera. Pixelvision user Dwight Swanson says:

> "I never thought of it as a toy. I thought of it as cheaply made. Even though the initial marketing was to kids, toy was never the right word for it... For me, it was never something to play with; it was always a video camera first and foremost."[11]

For some, the PXL 2000's identity as a toy belies its utility as a tool, a video camera stripped down to the most basic elements. In the world of toy cameras, some people seek an escape from the digital complexity of today's consumer electronics. On the toycamera.com website, Don Brice makes a humorous attempt to define the characteristics of a (still) toy camera photographer:

> "The toy camera photographer eschews the modern developments of camera technology, the reliance on computerised exposure systems, motorised film transport, PPI, TTL, CCD, DOF, the drive for higher and higher resolution, for gizmos, gadgets and carbon fibre tripods...They may however enjoy painting their Holga a pretty color."[12]

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[11] Swanson, interview.
[12] Brice, "Who Are Toy Camera Photographers?" <http://www.toycamera.com/about.cfm>.

Brice's quote may well lead one to accuse toy camera aficionados of harboring their own technology fetish, a subject that will come up again in the discussion of the PXL 2000 camera. Moreover, it would be false to classify toy camera users as enemies of new digital technologies; many Pixelvision videomakers have embraced digital editing and digital imaging technologies. Yet there is some legitimacy to the motivations of some toy camera users who take shelter from today's advanced technologies in the realm of toys. At its core, the PXL 2000 is a video camera stripped down to its bare essentials—no focus or light adjustments, filters, auxiliary lenses or variable speed. It captures an image, and there is a measure of purity in its simplicity and lack of controls.

Pixelvision and Adults

The idea of the toy as a sort of safe harbor for adults is a recurring theme in cultural theory dealing with toys. In his essays on toys, Benjamin spoke directly to the adult fascination with children's toys—he wrote that play is liberating, and that toys provide an escape from the harsh realities of the adult world.[13] In *Toys as Culture*, Brian Sutton-Smith attempts to define and explore two universal characteristics of toys, in that they are both miniature and schematic. One can argue about whether the PXL 2000 camera is miniature, though it was smaller and less bulky than video

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[13] Benjamin, "Old Toys: The Toy Exhibition at the Märkisches Museum," p. 100.

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equipment at the time. By labeling toys as schematic, Sutton-Smith

writes that they are in "marked contrast" to the objects in the real world

that they may reference.[14] This schematic nature is illustrated in the

further comments of Pixelvision user Swanson, who was quoted earlier as

saying that he did not think about the PXL 2000 camera as a toy. He goes

on to say: "The only way I saw [the PXL 2000] as a toy was just looking at

it— the way it looks with the plastic and the Fisher Price sticker on it..."[15]

When writing about the miniature and schematic nature of toys, Sutton-

Smith believes that both characteristics function as important delineators

between the toys and the objects they may refer to in the adult world.

According to Sutton-Smith, this clear contrast between toys and

everyday adult tools enhances play. It allows children (or adults) some

license to reinterpret the toy and to subject it to the whims of their

imaginations. For some Pixelvision artists, this freedom from the

constraints of traditional, or classic imagemaking is refreshing. Pixelvision

artist Bryan Konefsky says:

> "[The PXL 2000 camera] is only plastic, a toy. There is
> something about shooting with a toy... Certain cameras
> are entrenched with certain kinds of cinematic history—
> Panavision, Betacam... With these cameras and their

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[14] Sutton-Smith, *Toys as Culture*, 249; the Pixelvision camera measures approximately
8.5" x 9" x 2.5". Roland Barthes also wrote about toys as miniature versions of adult
tools and possessions in "Jouets," 58 – 60.
[15] Swanson, interview.

histories, I feel I might get buried in them. Pixelvision
offers a sort of freedom and a kind of play."[16]

With its plastic case, big buttons and Fisher Price logo, the PXL 2000 is

identifiable as a toy. Artists and users are mindful of this, and it may

inform how they use the camera as a tool. Many find that it is easier to

get up close to their subjects with a PXL 2000 camera, because it is less

intimidating and intrusive than a traditional camera: the lens is very small,

and the camera makes a whirring noise. Artist Erik Saks describes

Pixelvision footage as having "social artifacts" that illustrate the reaction

and ease that subjects demonstrate when interacting with the PXL 2000.

This camera produces less anxiety among the camera-shy than a

sophisticated camera with a state-of-the-art lens. Gerry Fialka, the

organizer of the PXL THIS Festival, jokes about the camera being a tool of

adolescent regression, as evidenced by the playfulness that marks some

of the Pixelvision short videos. He quotes a likeminded audience member

at a PXL THIS Festival, who commented, "If you try to make something

profound it looks silly. But if you make something silly it comes off as

being profound."[17]

Signs of this playfulness on the part of Pixelvision videomakers are

evident in the number of PXL videos focusing on toys, action figures and

other childhood objects. Is there any connection between the toy camera

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[16] Konefsky, interview.
[17] Fialka at CMS Colloquium on Pixelvision, March 3, 2005.

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Joe Gibbons and Ken in *Stepfather* (2001)

and the toy content in the videos? Many videomakers who use toys in

front of the lens are exploring adult situations, using toys as tools and

props. Joe Gibbons, a prominent Pixelvision artist, has made a series of

Pixelvision videos featuring himself, along with the dolls Barbie and Ken.

This series includes the titles *Barbie's Audition, Multiple Barbie, Pretty*

Boy and *Stepfather*. In each of these videos, Gibbons interacts with

Barbie and Ken, playing the role of an authority figure such as Barbie's

stepfather, a casting director or a psychiatrist. Gibbons' videos are

disturbing, funny and subversive on many levels; the audience's

Sadie Benning makes use of Barbie dolls in *Jollies* (1990)

sympathies are aligned with the dolls as they play out the conflict with

Gibbons' disturbing authority figures. Other video pieces featuring dolls

and toys include Sadie Benning's *Jollies* (1990) and John Humphrey's

Pee Wee Goes to Prison (included in the PXL THIS 13 Festival).

While it is true that the PXL 2000 camera, as a toy, may encourage

playfulness among artists and users, many of the scenarios involving

action figures and toys are made possible by the camera technology

itself. The PXL 2000 has an exceptional wide-angle lens that allows the

toys to be recorded successfully at very close range. The camera lens

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captures the toys in focus while objects in the background remain sharp.

This effect is especially important in Gibbons' pieces— Gibbons places

himself further away from the camera in order to minimize the size

differential between him and the dolls. In discussing this effect, Gibbons

said, "I had the Ken doll and I had the camera, and I think I was just

experimenting with the infinity focus and how Ken and I looked the same

size."[18] The PXL lens captures everything in focus, rendering the

conversation between Gibbons and the dolls more credible. In this way,

Gibbons' work successfully exploits both the playful aspect of the toy

and the technological specificity of the PXL 2000.

Some artists are not interested in the toy aspect of the PXL 2000 camera,

although audiences and critics may try to box them in with the "toy

camera" label. Filmmaker Peggy Ahwesh tackles a variety of issues in her

work, from drug addiction to sexuality. In the mid-1990s, she discovered

a disconnect between her dark subject matter and the expectations of

some European audience members at screening of *Strange Weather*, a

video about a group of young drug-users in Miami:

> "I went to Europe and showed *Strange Weather*. People
> were amazed by the Pixelvision and considered it an
> American thing, only American. And they associated it
> with childhood because they knew it was a toy. These
> Europeans put together the naiveté of Americans with
> the innocence of childhood and they got Pixelvision. It
> was interesting because my piece didn't fit that…Then

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[18] Gibbons at CMS Colloquium on Pixelvision, March 3, 2005.

they had to rethink what the format meant because of my piece. I liked that."[19]

Ahwesh's story is interesting because she brings up "the meaning" of a format, an issue that we will return to in a later chapter. In the meantime, it is useful to continue the exploration of how the toy label affects our perceptions of Pixelvision videos, and the people who make them.

Pixelvision and Children

Although the PXL 2000 did not last long on the market, a number of the cameras did end up in the hands of the target demographic. What of the children and teenagers who were creating videos and documenting life with the PXL 2000 "toy" camera? For many, Sadie Benning is the artist most identified with the Pixelvision format. Benning was an adolescent when she first began creating video pieces in Pixelvision, and served as de facto postergirl for Pixelvision in the 1990s and beyond. Aside from Benning, there is only a scattered record of children's use of the PXL 2000 in the home or elsewhere. What can this footage tell us about how children used the camera, both in the late 1980s and today?

Pixelvision works by children and teenagers do exist; they are not easily accessible. Erik Saks is a Pixelvision artist who curated a compilation of

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[19] Ahwesh, interview.

Pixelvision works in the early 1990s. At the time, he was interested in the

short videos and footage shot by children playing with the camera, and

he made a point to include a few of these works in his compilation:[20]

> "By watching the tape, you were seeing children play
> without adult supervision...I don't think you would
> [otherwise] see this kind of window into child's play
> because video cameras were expensive until they
> became digital, and it seemed like there would always
> be adults around making sure the kids didn't break
> them or use them incorrectly."[21]

In *Toys as Culture*, Sutton-Smith noted a paradox in the culture of giving

toys as gifts within families. While children often receive toys as gifts on

occasions celebrating family togetherness, the toys are, for the most part,

intended for the child's solitary use after the holiday has passed.[22] The

children are expected to entertain themselves with their toys, while adults

pursue their own agendas. The PXL 2000, as a toy, was simple and

rugged enough for a child to operate. As Saks intuited from looking a

works by children, the camera's status as a toy permitted them to use it

with little or no adult supervision, alone in their bedrooms or in the back

yard.

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[20] Saks, interview. Saks specifically references works by Sierra Le Barron Mellinger, whose videos were included in his compilation *Big Pixel Theory*.

[21] Saks, interview.

[22] Sutton-Smith, *Toys as Culture,* 23. While I agree with Sutton-Smith that adults join in the play on special occasions, I don't believe he pays enough attention to children playing with the toys in a group.

Kara Moore received the PXL 2000 camera as a Christmas gift, while it was still on the market in the late 1980s. She became an immediate devotee of the camera, and sent away to Fisher Price for all of the accessories, including the special PXL audiocassettes and the PXL 2000 "Action Strap."[23] Moore indicates that, as a child, the camera felt like more than a toy; before the PXL 2000, it seemed to her at the time that "only grownups had that kind of access to play and record moments."[24] With approximately 40 tapes in her Pixelvision collection, Moore remembers focusing her efforts on recording daily life in documentary mode, or on using the camera as a personal diary format. One of the attractions for Moore was the ability to immediately play back what she had recorded; she didn't remember feeling disappointed at the camera's lack of resolution or color. The camera fascinated her immediately.

Moore's recollection of her experiences with the camera is valuable, and it is useful to compare Moore's memory with the impressions of a child in the present day. Juniper Woodbury is nine years old and likes to make videos with the PXL 2000 camera. Two of her shorts screened in the PXL THIS 13 festival, and she enjoys shooting footage with both the PXL 2000 and her parents' mini-DV camera. Woodbury says that she enjoys shooting with the Pixelvision camera because of its simplicity; there is

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[23] Sold separately from the camera, the "Action Strap" carried camera accessories and could be worn as either a belt or a shoulder strap.
[24] Moore, interview.

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only one way to hold it, and she has mastered all of the controls.

Woodbury seemed surprised that the PXL 2000 camera did not catch on

with kids in the 1980s, and said that she liked the way the image looks,

although not all of her friends do.

The testimonies of Moore and Woodbury indicate the range of practices

among children and amateurs, and their experiences counter the

hypothesis that all children were turned off by the PXL 2000's low-

resolution image, and its lack of color. Among children who had access

to the camera, there are examples of rich amateur use, just as there are

examples of children who cast the camera aside after a few disappointing

efforts. Sadie Benning wonders if the camera was purchased for children

who were too young to enjoy it because Fisher Price, as a brand,

produced toys for younger children. Benning describes her relationship to

the camera as a teenager:

> "Once I realized you could use lighting in the image, it
> changed. There was a technological development that
> happened over a two-year period. I stuck with it, and it
> was the perfect moment for me. If I had been a ten-year
> old, I wouldn't have known what to do with it. I was more
> able to think about it at the time."[25]

Sadie Benning is an interesting case because she started out as a

teenager, making Pixelvision videos in her room in the late 1980s, and

then rose to prominence as a video artist. Her Pixelvision shorts have

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[25] Benning, interview with author.

screened at New York's Museum of Modern Art and at the Whitney

Biennial in 1993. She went on to get an MFA and to pursue a career as an

artist, and is still experimenting with Pixelvision today.

Benning's father, experimental filmmaker James Benning, was connected

to the experimental video scene that later embraced her work. James

Benning gave Sadie Benning the PXL 2000 camera when she was an

adolescent, and she describes her reaction to the camera as follows: "I

thought, 'This is a piece of [expletive]. It's black and white. It's for kids.

He'd told me I was getting this big surprise. I was expecting a

camcorder."[26] Benning eventually warmed up to the PXL 2000, using it as

a means of self-expression. She made her first videos in her bedroom,

exploring her developing sexual identity, her sense of isolation and her

place in the world at large. Critics often refer to Benning as a "bedroom

auteur," and the bulk of academic writing about Pixelvision is devoted to

her work.

Benning did not have an audience in mind when she began working in

Pixelvision, nor did she have any aspirations to "art." She used the

camera to express herself in a diaristic mode, getting up close to the lens

and recording herself: "Originally the camera was very valuable to me as

something that was immediate. It was my diary. It was like having a pen

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[26] Masters, "Auteur of Adolescence."

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and being able to write things down...I never really saw it as a toy. I didn't

feel like I was playing."[27] Initially disappointed by the camera, Benning

came use it in a raw, first-person style. The camera always came

complete with a "bipod" which supported the camera on a hard surface,

allowing a solitary operator, like Benning, to shoot herself in front of the

lens. Peter Donaldson points out that, for diary purposes, the camera

allowed an unprecedented degree of privacy for its users due to its

incompatibility with other consumer media formats. A video diary shot in

Pixelvision must be played back through the camera, and is therefore less

likely to cross over into the conventional family media space.[28] Benning

points out that her own initial practice with the PXL 2000 camera was the

sort of experimentation common to others in her age group: "There's

kids like me doing things in their bedrooms everywhere. They're just not

told what they're doing is valuable."[29]

Why did it fail?

The PXL 2000 appears to have worked remarkably well as a simple tool,

serving the purposes of both artists and children. It performed adequately

by most reports, although there was some quirkiness in the

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[27] Smith, "Toy Stories," 28. As Benning's career progressed, she began to explore performance and narrative. This quote refers to her earliest experiences with the camera.

[28] Donaldson, "Hamlet among the Pixelvisionaries," 6.

[29] Gragg, "Close Encounters on Film," AE25.

performance.[30] Why did it fail on the market? Despite an initial prediction that the price of the PXL 2000 could "practically be covered by savings from a paper route,"[31] it appears that the high cost of the camera was the primary reason for its market failure. Inventor Wickstead and a source at Fisher price concur that the target price for the camera was $99.[32] But the camera, manufactured by the Sanyo Corporation in Japan, fell victim to the vagaries of the international money market. The US dollar collapsed against the Japanese yen in 1987, driving up Japanese production costs for Fisher Price. At the same time, manufacturing proceeded slowly, and the product was late getting to market.[33] To make up for the already inflated costs, Fisher Price introduced the PXL 2000 as a deluxe set which came complete with a TV monitor and cartridges. According to Wickstead, the PXL 2000 Deluxe Camcorder System debuted at $179, well over the targeted price point. Fisher Price eventually sold the camera alone for $129.99, but this effort at reducing the cost may have come too late to convince consumers to take a chance on the product.

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[30] The camera did not perform well in cold weather, and there were some problems with tape interchange: a cassette recorded in one camera would not necessarily play back correctly in another.

[31] Brody, "Revolution in Toyland," 42.

[32] Wickstead, interview, *The Art of Pixelvision* and Lerner, email message to author, April 5, 2005.

[33] The Sanpix 1000 camera, manufactured by Sanyo in the 1990s, is supposed to be the exact same model as the PXL 2000, sold under a different name.

The original box for the PXL 2000 camera

Laurie Oravec at Fisher Price surmises that the market was not ready for a toy video camera in 1987. Consumer video was still very expensive, and parents may not have been ready to consider this kind of advanced technology for children; in the late 1980s, the advancing culture of consumer technology had not yet yielded the abundance we are faced with today. Price must have been an issue, as well as familiarity with video technology. A price index shows that a product sold at $179 in 1987 would retail at roughly $300 today.[34] By the standards of today's digital marketplace, a $300 product would be held to higher standards of sophistication and technology than the PXL 2000, and would probably not be marketed to children.[35]

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[34] Inflation calculator at <http://www.westegg.com/inflation/>.

[35] Today's wireless video cameras for kids sell at approximately $100. A low-end video camera with limited features can be purchased for approximately $300 in 2005.

Another explanation for the market failure of the PXL 2000 is that children were not attracted to the black and white, low-resolution image. It did not look like the video produced by the top of line consumer cameras, nor could it compete with broadcast-quality color television. Yet Oravec says that Fisher Price tested the product with children at their on-site play lab, and their research showed that children responded positively to the camera. While Sadie Benning expressed some initial dissatisfaction with the image, her overall experience, as well as the testimonies of Moore and Woodbury, confirm that at least some children enjoyed the product. The product certainly did not appeal to everyone, but its limited availability limited the number of children who tried it. Woodbury noted in an interview that some of her friends like the PXL 2000 image, while others react negatively to it because of its lack of color and resolution. Moore's devotion to the camera led several of her friends to purchase their own.

In the end, poor marketing may have been the final nail in the market coffin of the PXL 2000. A 1988 Fisher Price catalog indicates that the product was supported by television and print advertising, but I was unable to determine if the advertising campaign was robust. The advertising budget may have suffered as a result of the increase in manufacturing costs, or it may have been pulled when initial sales numbers were shown to be weak. Advertising circulars produced by local

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Toys 'R' Us and Kmart stores probably did more to sell the camera than any marketing initiatives by Fisher Price. I spoke to more people who spotted PXL 2000 advertisements in newspaper circulars than saw the television commercials.

The PXL 2000 television advertisement, which encourages kids to use the PXL 2000 in order to be "seen" as well as "heard, " is reminiscent of an early music video. Shot in full color, it shows kids out on the streets shooting with their PXL cameras and playing the black and white Pixelvision images on their monitors. The TV ad is loud and colorful; a few attendees at various PXL events claim to remember seeing the advertisement on television in their youth. However memorable, the PXL 2000 marketing campaign failed to penetrate the consciousness of mainstream consumers. The PXL camera remains an obscure, obsolete video format, almost invisible in today's crowded mediascape. Pixelvision fans and users have become very adept at explaining the ins and outs of the format to the vast majority of people who are surprised to hear about this quirky camera that records video onto audiocassettes. Kara Moore puts it best: "When I talk about the PXL 2000, no one knows about it. People have never heard of it and they don't believe that there was such

a thing that existed. So it was almost like I lived in ghost world or

something. I wish it would have caught on..."[36]

[36] Moore, interview. In the mid-1990s, James Wickstead was interested in putting a color version of the Pixelvision camera back on the market (see Revkin, "As Simple As Black and White.) In a 2003 interview, Wickstead indicated that this was no longer a practical idea, and he would no pursue it. (See Wickstead interview, *The Art of Pixelvision*.) Some users have tried experimenting with the Tyco Kid Cam, another low-res video camera on the market in the 1990s.

Chapter 2: Amateurs, Artists and Professionals

At the moment that Fisher Price abandoned the PXL 2000 to languish in the marketplace, artists wandering the aisles of Toys "R" Us were taking a chance on this new video format that allowed for experimentation on the cheap. More than one artist has admitted to picking up the PXL 2000 as an impulse buy at Kmart.[1] Withdrawn from the market in 1989, four years elapsed between the Pixelvision's market failure and the premiere of Sadie Benning's Pixelvision shorts at the 1993 Whitney Biennial. Those four years witnessed a number of underground screenings in cities across the nation, the birth of the PXL THIS Festival (1991), the introduction of Pixelvision to the New York art scene and Pixelvision's appearance in Richard Linklater's *Slacker* (1991), its first bit part in a 35mm commercial film.

Though Pixelvision was all but imperceptible to consumers of mainstream media, the artists who picked up the cameras elevated the format to a visibility that is surprising for a product without any market success. As

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[1] O'Reilly, interview; Gibbons at CMS Colloquium on Pixelvision, March 3, 2005.

discussed in chapter one, there is a scattered record of amateur practice

by children and teenagers in the late 1980s, including users who were

making their own short videos and users who were imitating television

shows, advertisements and other staples of the media landscape. Some

of this footage will survive in amateur collections, but Pixelvision will

always be associated with experimentation beyond its target

demographic of home users. [2]

This kind of adoption of and experimentation with amateur formats

beyond the home is nothing new. In her book *Reel Families*, Patricia

Zimmerman identifies two strains of experimentation in the early days of

amateur film equipment, beginning in the 1920s: professionals using

amateur cameras to experiment with visual effects, and avant-garde

filmmakers taking advantage of these accessible and inexpensive

technologies to create images for personal and artistic reasons.[3] In the

1930s and 1940s, the experimentation described by Zimmerman

developed in tandem with a robust amateur practice among middle class

and upper middle class consumers. In the case of Pixelvision, the

experimental practice came to define the format, while an analogous

amateur practice never gained momentum, After its failure on the market,

Pixelvision became closely associated with the underground and the

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[2] Some posts to the Pixelvision Mailing List include queries from people looking to transfer their old PXL 2000 footage to more stable formats for their private collections.

[3] Zimmerman, *Reel Families*, 66.

avant-garde, not the sphere of home and family. For many, associations

with the underground have come to define the format, though there has

been some experimentation in the professional realm.

Avant-Garde Rise and Fall

In the early 1990s, there was considerable energy surrounding the

Pixelvision in the avant-garde art scene, based in New York City. Joe

Gibbons describes the sudden interest in the format at that time:

> "I had been making Super-8 films, but they were
> restricted to the film festival circuit. The Pixelvision
> tapes were instantly granted access to the art world.
> The fluid look, the black and white— they give
> Pixelvision a degree of abstraction that makes it more
> readable as art. My other films didn't have that. I
> suddenly had another arena."[4]

A low-res toy camera suddenly found itself as the darling of the New York

art scene in an embodiment of what Marshall McLuhan dubbed "cool

media." In discussing the avant-garde in his book *Understanding Media*,

McLuhan makes a distinction between so-called "hot" media and "cool"

media. While "hot" media is "low in participation," "cool" media is

interactive, "high in participation or completion by the audience."[5] I bring

up this definition because McLuhan goes on to make a useful connection

between "cool" media and the avant-garde. He writes that we "find the

avant-garde in the cool and the primitive, with its promise of depth

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[4] Gibbons at CMS Colloquium on Pixelvision, March 3, 2005.
[5] McLuhan, *Understanding Media*, 23.

involvement and integral expression."[6] This is an interesting definition in

terms of the PXL 2000 camera, and its adoption by the art world in the

late 1980s. Many artists and fans were very attracted to the PXL 2000

image because of its low-res abstraction:

> "The beauty of film and photography is that you give
> people an image and you let the viewers fill in from their
> own backgrounds. That is what leads you down the road
> to good art. Don't beat people over the head—[good art]
> gets people thinking more and lets them fill in their own
> backgrounds. That is what I see with Pixelvision."[7]

The connection that McLuhan makes between an active viewer and

avant-garde art seems to hold true in the case of Pixelvision. Many artists

and viewers like the fact that the PXL 2000 image does not contain a lot

of information. The sensory connection between the viewer and the world

portrayed in the Pixelvision image is severed; the viewer must examine

the image closely in order to recover his or her bearings in that world.

In the context of the avant-garde film and video scene, the black and

white, low-resolution image became an instant aesthetic, a way of looking

at the world:

> "An artist is always looking to get a look to their work,
> and straight ahead video is not very compelling. If the
> culture has decided that a certain video clarity, a certain
> kind of audio and a certain broadcast quality is realism,
> or real, then for an artist to interpret the world, you need

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[6] McLuhan, *Understanding Media*, 27.

[7] Possert, interview.

to get an aesthetic... an artist is kind of translating the world, not representing it."[8]

In the PXL 2000 camera, artists in the late 1980s had found not only an affordable and accessible video format, but also a new aesthetic to explore. This new aesthetic was more than just a low-res way of looking at the world. It had an additional cultural resonance as a child's toy, the antithesis of the expensive cameras used to create Hollywood cinema or professional television. A 1994 exhibition at the New York Video Festival was billed as "Pixelvision: The Philosophical Toy."[9] There was a certain thrill associated with creating and watching art made with a plastic, toy camera with cheap, low-culture associations. Yet for some critics, these cultural associations, which we will analyze in a later chapter, are indistinguishable from the aesthetics of the Pixelvision image. The camera's cultural baggage and its lack of detail spark a negative reaction among some viewers.

One criticism of the PXL 2000 is that the camera's low-resolution image masks sloppy filmmaking. There is merit to this criticism. The PXL 2000 camera does not require a lot of training. Some detractors perceive a lack of production values in Pixelvision work. But most Pixelvision users seem

[8] Ahwesh, interview.

[9] Philosophical toy is a term that was common in the nineteenth century, used to refer to pre-cinema and early cinema "toys" and technology. These toys were also seen as devices to further scientific knowledge.

to appreciate and accept the way the low-res image can level the playing

field between skilled artists and those just starting out. Perhaps this

matters less to the artists than the critics. Pixelvision videomaker Dwight

Swanson says:

> "It's kind of easy to shoot Pixelvision…If you shoot
> something poorly or make a mistake on film or DV, it
> generally looks bad or looks like a mistake. Pixelvision
> looks wrong to begin with in the sense that it is not what
> you are used to seeing. If you do something wrong in
> Pixelvision, it is easier to hide your mistakes because
> you don't necessarily see them as mistakes…"[10]

The leveling function of the low-resolution image is probably one of the

reasons that Pixelvision has met with resistance in some corners of the

art world—detractors see the camera as serving as a one-dimensional

aesthetic crutch. An exploration of a cross-section of Pixelvision films can

shed light this debate by considering how artists exploit the camera's

technology and its aesthetic, and will be pursued in chapter five.

After its initial heyday among video artists and the avant-garde in the

mid-1990s, how has Pixelvision fared in the art world? Dismissed by

many as a fad, there is an identifiable reaction against the format in some

quarters.[11] As an MFA student exploring documentary filmmaking from

2000 – 2002, Ellen Lake received negative feedback from some of her

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[10] Swanson, interview.

[11] I hesitate to call this reaction a backlash, because that term implies a level of
acceptance or popularity that Pixelvision never enjoyed.

thesis committee members when she showed them footage she had shot in Pixelvision. Lake has since come to recognize that the PXL 2000 image is not compelling to all audiences, and she theorizes that some people are attracted to the Pixelvision look, while others are not engaged by its abstract nature. According to Lake, some artists are frustrated by the image, the lack of detail and the whole aesthetic of the camera.

Lake also admits that a certain "format snobbery" may play a role in some of the negative reactions to the Pixelvision footage: "There is a tendency in the art world to think of Pixelvision as clichéd. Its originality is no longer a factor; it has been done."[12] For some art critics unfamiliar with the variety of video work made in Pixelvision, the format has become synonymous with the work of Sadie Benning, whose work has cast a very long shadow. Even Benning, as her career progressed, was asked why she continued to shoot in Pixelvision, when her success provided her the means to use other formats.[13] Pixelvision can easily be seen as a fad, especially in the "art world," which tends to celebrate the new. In using the term "art world," Lake and others are referring mostly to the New York art scene, its satellite galleries and the market that buys and sells works of art. This term also brings to mind the work of Howard Becker, whose

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[12] Lake, interview.

[13] Publications on the history and highlights of video art tend to mention the Pixelvision format only in relation to Benning's work. See Rush, New Media in Late 20th-Century Art, 109 – 111; Benning, interview.

theories we will return to again in chapter four. In regards to the art

establishment, Becker wrote about maverick artists who work outside of

the conventions of the traditional art world, and he also noted the

difficulties that outsider artists can have in gaining recognition and

distribution for their works. These artists are often not taken seriously by

the establishment and may be labeled with the dreaded term "amateur:"

> "[P]articipation in the established distribution system is
> one of the important signs by which art world
> participants distinguish serious artists from amateurs.
> People who use alternative systems created for those
> rejected by the regular system, whatever their reason,
> may mark themselves as non-serious."[14]

This quotation from Becker highlights a relevant point concerning the art

world's distinction between artists and amateurs, because the line

between them is often blurred. In today's media environment, amateurs

have access to the same sophisticated equipment that artists, and

professionals, use. In most cases, amateurs are constantly upgrading to

the latest equipment, always lagging a step behind the professionals; with

Pixelvision, the three groups are on a more equal footing, chasing after

the same obsolete cameras. The results, however, vary dramatically.

Amateurs, artists and professionals exploit the format in different ways,

with different audiences in mind, yet the activities of each group influence

the others.

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[14] Becker, Howard *Art Worlds*, p. 97.

Amateur Sensibility and Artistic Intent

Most of the Pixelvision filmmakers that I interviewed did not seem to be in the orbit of the New York art scene. Although many of the filmmakers that I interviewed were practicing artists, not many felt a strong connection to the New York "art scene," or depended on it for their livelihoods or their reputations. The other artists claimed a distance between their own work and the New York scene. Bryan Konefsky, who lives and teaches in New Mexico, says: "If you are talking about experimental, essay, personal or alternative approaches to moving images, you are talking about passion. You are not making a living at it."[15]

While the artists that I interviewed may or may not make their living from art, it became clear in my interviews that Pixelvision videomaking was, more than anything, a labor of love in keeping with the origin of the word amateur, which denotes this very sort of passion. Some of the interviewees identified with the term amateur. Other interviewees were working artists, but expressed some solidarity with amateurs devoted to the craft of filmmaking. Artist Doug Ing makes one short video each year in Pixelvision because he enjoys the format and finds it challenging. Ing spends the rest of the year working in other formats. Peggy Ahwesh, who

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[15] Konefsky, interview. Konefsky, who is employed as a media arts professor, refers to making a living from selling art, not to making a living through teaching or grants.

is an established artist, recognizes Pixelvision as a successor to a long

line of amateur film formats:

> "I am a low-end filmmaker. Many of us are of the same
> generation and came of age working with Super-8 film.
> We already had an amateur, home movie aesthetic,
> which came from Super-8. We didn't go to college to
> make 16mm films or features. We made weird
> autobiographical and experimental works."[16]

If we return to Zimmerman's exploration of experimentation with early

amateur film equipment, we find that she identifies a group of avant-

garde filmmakers, beginning in the 1950s, who appropriated the home

movie aesthetic in their artwork "as a formal manifestation of a

spontaneous, untampered form of filmmaking." She goes on to write,

"filmmakers working in super-8 as an inexpensive, artistic medium

express [a] liberated amateurism."[17] This "liberated amateurism" might be

the very attitude that drives artists to create with a consumer toy like the

PXL 2000 camera in the first place. When considered in as light of this

tradition of amateur sensibility, then it is not surprising to find Pixelvision

at the center of avant-garde video for a brief moment in the 1990s.

Pixelvision provided a means for artists not only to express themselves,

but also to question expectations about what kinds of technology are

appropriate for "art."

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[16] Ahwesh, interview.

[17] Zimmerman, *Reel Families*, 146. Zimmerman refers to Jonas Mekas and Stan
Brakhage as avant-garde filmmakers who appropriated the home movie aesthetic.

Professionals and Pixelvision

Just as criticism from the art world revealed that the Pixelvision image does not have universal appeal, it is also easy to imagine why the format was never embraced by professionals in the media industry. In professional circles, the PXL 2000 camera was, and is today, sometimes dismissed as a gimmick for the very same low-culture associations that made it thrilling to the avant-garde. Doug Ing says, "No ad agency or commercial director is going to look at PXL and say 'this is great!'"[18] The same applies to many film festivals, even those that bill themselves as "independent" or "experimental." Michael Possert, who works in special effects for the Hollywood film industry, shoots videos in Pixelvision and several other formats. He makes reference to "format snobbery" among the higher-end, "independent" film festivals like Sundance or Toronto. These festivals tend to reject experimental works and small-gauge formats in favor of more conventional, narrative films and videos: "I have sent Pixelvision around to all of these festivals... On the whole, they are looking for films that are clean and polished. They are feeding Hollywood with clean and professional stuff."[19]

While most Pixelvision videos were never made with the intention to compete in top film festivals, there is no denying Possert's accusation of

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[18] Ing, interview.

[19] Possert, interview. Possert later adds that he will only send films shot in amateur formats to festivals that are open to screening them.

a bias against Pixelvision and other amateur formats in the upper tiers of professional filmmaking. 35mm film is still the professional standard, and most professionals are looking for a standard, high-quality image. Yet Possert counters that "a professional camera is any camera the professional wants to use, [as long as] it serves the story."[20] Few commercial filmmakers aside from Michael Almereyda have ever used Pixelvision in a 35mm commercial film; most would never consider it. Almereyda has found success with Pixelvision because he is somewhat of an outsider.[21] His sensibility and reputation are already edgier and more "indie" than the average Hollywood filmmaker, who would never consider working with a PXL 2000 camera in the first place, for many valid reasons.

By its nature, the commercial media industry is more conservative than artists and filmmakers working outside of Hollywood. The large amounts of money tied into Hollywood film lead commercial producers away from projects involving experimentation and risk. Yet in keeping with the earlier reference to Zimmerman's analysis of early amateur film, there have been rare instances of professional experimentation with Pixelvision in the 1990s. Pixelvision has surfaced infrequently in the commercial media, engaging professional media artists who look to the margins for

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[20] Possert, interview.

[21] Almereyda's films include *Another Girl, Another Planet* (1992), *Nadja* (1994), *The Rockinghorse Winner* (1997) and *Hamlet* (2000).

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inspiration and new ideas. Andrew Revkin of the *New York Times* reports that both MTV and the NFL have had PXL 2000 cameras modified to their specifications, although it is not clear when or if they aired Pixelvision segments.[22]

Pixelvision and Indie Film

Pixelvision's first appearance in the commercial realm in the early 1990s coincided with the rise of an "independent" film movement that pushed the boundaries of conventional Hollywood filmmaking.[23] These "indie" films were concerned with storytelling, but also with art and experimentation. Filmmakers involved with independent film were aware of film history and of trends in video art. They brought some of this experimental sensibility to their narrative filmmaking, and the success and popularity of a few of these films led studios to take chances on films with a less formulaic style. Although Michael Almereyda is the director most associated with Pixelvision in the commercial realm, I would like to focus here on Richard Linklater's *Slacker*, a film about slacker culture that contains a short but memorable scene shot in Pixelvision— the first commercial film to feature Pixelvision footage. The Pixelvision scene in this film may have escaped the notice of many viewers, but the scene is not inconsequential.

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[22] Revkin, "As Simple as Black and White."

[23] Biskind, *Down and Dirty Pictures*. This book provides an account of the rise and fall independent filmmaking in the 1990s.

Richard Linklater's *Slacker* (1991): the Pixelvision scene takes place in a club

Slacker celebrates a segment of young adults who are disenchanted with the conformity and materialism of the workaday world. Many of the characters in the film are of a philosophical bent, and are open to making and considering art outside of the mainstream. The film has a loose narrative structure, and contains sketch scenes with a variety of characters, some of whom we only encounter once. The Pixelvision scene takes place inside a club, and the film switches from conventional color footage to Pixelvision as one of the characters enters the club, recording with his PXL 2000 camera; the audience views the Pixelvision footage as it is shot by the characters in the film. One of the characters identifies the camera as a PXL 2000, for the benefit of the other

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characters and the audience, and we see a collection of loosely knitted shots as the characters pass the Pixelvision camera around: shots of the inside of the club, of someone banging out a rhythm on some large plastic water jugs, of a group of characters leaving the club through the back door. These shots are accompanied by the music in the club as well as the countercultural musings of the characters as they discuss how a Masonic conspiracy could have affected the course of American history. In the final shot of the Pixelvision scene, a character passes by the camera, looks into the lens and says, "There ain't no film in that [expletive]."

A low-budget film, *Slacker* was shot primarily on 16mm, and contains segments in video, Super-8 and Pixelvision. Linklater made a conscious effort to include these non-standard media formats in the film. In doing so, he shows the audience a range of media practices outside of the commercial film world. [24] When Orion Pictures picked up the film for commercial distribution, it was transferred to 35mm, and for the first time, Pixelvision was visible to conventional film audiences as a reflection of "alternative" culture. Many audience members probably lost the reference.

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[24] Linklater, director's commentary, *Slacker*.

Both the Pixelvision and Super-8 segments of *Slacker* are worked into the diegetic world of the film, as characters are shown shooting with the cameras; we see the world through their lens. *Slacker* is a good example of a professional filmmaker exploiting Pixelvision's amateur roots and Zimmerman's "liberated amateurism." Linklater locates Pixelvision as a format for amateur expression rather than a means of avant-garde experimentation. In *Slacker*, the format sees its debut in the professional realm as a marker of underground authenticity as well as artistic expression. These attitudes toward Pixelvision color its use and reception throughout the commercial world, whether in 35mm film or music videos. I will explore some of these attitudes further in chapter five.

PXL THIS

Since 1987, Pixelvision has screened in art galleries and appeared in a few commercial films. But for those who seek it out, the most reliable sources for Pixelvision videos are the occasional local screenings. Independent screenings have showcased Pixelvision shorts in cities across the nation; the videos are also shown at experimental film festivals and microcinema screenings.[25] Of these festivals and screenings, the most famous is undoubtedly the PXL THIS Festival, an annual festival devoted entirely to Pixelvision videos. Inspired by some of the local

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[25] Festivals include 20,000 Leagues Under the Industry, the Flicker festivals and microcinema screenings in small theaters, cafés and other non-traditional venues.

Pixelvision screenings in the late 1980s, Gerry Fialka founded the PXL

THIS festival in 1990; it is currently in its fourteenth year. As the festival

organizer and as a filmmaker, Fialka approaches Pixelvision with an

awareness of its limitations and a good sense of humor. He declares PXL

THIS to be "the cheesiest, no-budget film festival ever,"[26] while at the

same time referencing artists and theorists from Marshall McLuhan to

Marcel Duchamp in order to celebrate and defend Pixelvision as an art

form.[27]

Fialka is ultimately interested in cultivating a democratic, back-to-basics

approach to imagemaking through the PXL THIS festival. In the DIY (do-

it-yourself) fashion, he solicits submissions from filmmakers and curates a

show that includes most of the work that is sent to him.[28] Unlike most film

and video festivals, there is no submission fee, and PXL THIS takes pride

in placing the work of children and amateurs next to artists who might be

accorded special status elsewhere. Fialka says, "We are very proud to

show eight-year-old Juniper Woodbury next to Eliot Fons, a professional

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[26] Lafong, "The Toy that Won't Quit,"
<http://www.indiespace.com/pxlthis/articles.phtml#lafong>.
[27] Lafong, "The Toy that Won't Quit,"
<http://www.indiespace.com/pxlthis/articles.phtml#lafong>. In this interview, Fialka
says, "The more you know, the less you need." He also quotes McLuhan ("Art is
anything you can get away with."), Duchamp ("Poor tools require better skills.") and
others.
[28] Fialka selects what he considers to be the best shorts for the version of the festival
that tours the country.

film and TV cameraman."[29]

The idea behind the PXL THIS festival is to provide a venue for Pixelvision

users to show their films, and for audiences to view them. Fialka founded

the festival before the Internet was a widespread means of connection,

community building and the distribution of non-commercial work. By

providing a means of exhibition, Fialka was completing the loop that

began when artists took up the PXL 2000 to create their work in the late

1980s. In celebrating Pixelvision as "the DNA of digital filmmaking," Fialka

refers to the capacity of the artist to create and distribute their images

independently at little cost.[30] New digital technologies are supposed to

open up these same frontiers to artists today:

> "With Pixelvision, there was the potential, even if it was
> not realized, of a new sense of democratization of
> technology. And this potential also exists for some of the
> new technologies like mini DV, Final Cut Pro. A short
> time ago these technologies were tens or hundreds of
> times more expensive. I'm seeing many more voices in
> the various festivals I go to."[31]

There is a utopian quality to discussions of the potential of digital media.

In the 1960s, Marshall McLuhan wrote about the promise of participatory

media, and its ability to help people translate nature into art; he praised

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[29] Lafong, "The Toy that Won't Quit,"
<http://www.indiespace.com/pxlthis/articles.phtml#lafong>.
[30] Fialka, interview with author. Fialka says that he first referred to Pixelvision as the
"DNA of Dogma filmmaking," because the two have a certain simplicity in common.
Fialka adds that Pixelvision can also be seen as the "DNA of digital filmmaking" too.
[31] Konefsky, interview.

its ability to free us from "the Narcissus illusions of the entertainment world."[32] In the 1990s, many pundits predicted that the rise of interactive technologies like the Internet would have similar liberating effects, turning audience members into producers, and allowing grassroots media to compete with the power and influence of Hollywood, the broadcast media, and even the nation state. The Internet was seen as the ultimate enabler of direct democracy in writings such as "The Declaration of Independence for Cyberspace" by John Perry Barlow.[33]

While many artists recognize the popular potential in formats like Pixelvision and DV (digital video), they are also wary of the technological utopianism these formats engender. They understand the sentiment, but many refuse to entertain a discussion of Pixelvision or any other technology as "liberatory," "political" or "subversive." Although artists recognize that there are areas of grassroots energy, they are pessimistic about the increasing control of multinational corporations over the media and the resulting illusion of increasing choice:

> "[The philosophy is that] if you get the tools into the
> hands of the people then it is going to change everything
> about media production... There has been plenty of time
> for that to have happened by now, and there are some
> great things that happen when that occurs, but for the
> most part, people are watching network TV and they are
> going to Hollywood movies. I'm no longer so naïve or
> optimistic to think that getting a $100 video camera...is

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[32] McLuhan, *Understanding Media*, 60.

[33] Available at <http://homes.eff.org/~barlow/Declaration-Final.html>.

going to make a big political change in media and
culture as a whole."[34]

Because Pixelvision was only on the market for a year, it never found its

way into the hands of "the people." It was, for all intents and purposes, a

failed technology. And though it may have provided the "DNA" for today's

digital filmmakers, it has never been immediately visible or accessible in

the consumer media landscape.

Despite the reality of growing corporate control, there is a kernel of truth

to the breathless proclamations of grassroots power and possibility, no

matter how utopian they may seem. The 1990s saw the rise of the

Internet, as well as the ascendance of the "independent" film as a

challenge to standard, big-budget Hollywood fare. Although the

"independent" film movement was soon co-opted by Hollywood, this

movement, and other media advances, did open up the mediascape to a

range of voices that had not been heard before, and perhaps inspired

viewers to look for interesting work at the margins. As a format,

Pixelvision benefited from this openness in the early 1990s. Linklater and

Almereyda had the freedom to include Pixelvision segments in their

35mm films. PXL THIS gained in notoriety. The Internet provided a

clearinghouse for information and technical documentation about the

format, supporting experienced artists, amateurs and novices alike.

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[34] Swanson, interview.

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The example of Pixelvision's myriad appearances in different corners of the media world demonstrates a continuum between the sectors of professional, artist and amateur. This continuum cannot be cleanly segmented in three parts; it is not exceedingly well-defined, nor does it need to be. What is clear is that these three categories of media makers feed off one another, creating a continuous feedback loop. In a recent article in *Technology Review*, Henry Jenkins compares amateur subcultures to "Petri dishes" that continually refresh the larger media culture.[35] A product intended for amateurs, Pixelvision has circulated through the larger culture of the art and media worlds, quietly enduring for over fifteen years.

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[35] Jenkins, "Taking Media in Our Own Hands," http://www.technologyreview.com/articles/04/11/wo_jenkins110904.asp?p=2.

Chapter 3: Gateway Camera or Obsolete Cult Object?

The final page of the PXL 2000 manual describes the camera as "the lightest, least expensive and easiest to use camcorder currently on the market." With a readable synopsis of technical details and instructions, and only one image of a child "playing" with the camera, the manual focuses on the camera as a tool, not a toy. [1] With its list of tips for realizing an optimal image, the language of the manual is simple and easy to understand. At the time, the barriers to entry for Pixelvision were low; even a child could use it.

Regardless of its status as a toy, the PXL 2000 occupied a special niche in the video market in the late 1980s; Pixelvision was an accessible and affordable video technology. Yet Pixelvision's accessibility did not make it a success, and soon after the camera was taken off the market, the PXL 2000 made the transition from accessible toy camera to obsolete cult object. Its status as a cult object is partly responsible for the survival of

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[1] Fisher Price, PXL 2000 owner's manual, back cover.

Pixelvision as a format, but at the same time, obsolescence has rendered the camera less accessible and less visible to beginning videomakers.

For many users, both children and adults, Pixelvision was a means for experimentation with videomaking. Users could learn the basics and focus on creative projects without making the heavy investment in consumer film or video equipment. In the late 1980s, Pixelvision represented a video option for regular people, and despite the market failure, the camera did find its way into the hands of children and beginner filmmakers. For many, it facilitated their exploration of the craft.

Now working as an archivist, Kara Moore used the camera as a child, and credits Pixelvision with inspiring her later interests in media production and archiving: "It was one of the reasons that I ended up studying TV production as an undergrad. I ended up buying a more expensive camera later on, but Pixelvision started me down the media path."[2] Others boast of similar experiences with the PXL 2000 camera. Timothy Shearer, an amateur videomaker involved with public access television, claims that the PXL 2000 was his first video camera and that it fed his desire to pursue amateur film and videomaking in the public access realm.[3]

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[2] Moore, interview.
[3] Shearer, biographical information, <http://members.aol.com/r2rprod/producer.html>.

In the eyes of many, and in keeping with its status as a toy, the PXL 2000 is seen as a gateway camera, a simple tool that allows for training and experimentation before users upgrade to a more sophisticated model. Moore bought a more advanced camera when she got to high school. Filmmaker Michael O'Reilly says, "I've definitely moved on from Pixelvision. Now, I can do Hollywood quality editing with my system right back here… For me, [the PXL 2000] was my first tool and it was a really good tool."[4]

Filmmakers may "move on" from the PXL 2000 for a variety of reasons. The camera can provide a springboard to more sophisticated equipment. They may seek out aesthetic variety in other film or video formats. Users in the late 1980s may have left the camera behind as they grew up or updated to contemporary digital formats. While some users abandon the camera for more sophisticated technology, this does not mean that the camera is only useful for beginners. Gerry Fialka, filmmaker and curator of the PXL THIS Festival, takes issue with this idea because they detract from the legitimacy of Pixelvision as a format. Fialka compares Pixelvision videomaking to drawing with charcoal and paper. In the right hands, simple tools can be elegant and sophisticated. Today, many experienced filmmakers continue to use the PXL 2000 along with more sophisticated video and film cameras and contemporary editing equipment.

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[4] O'Reilly, interview, *Egg the Arts*.

Toy Soldiers Goes to Hollywood

The discovery of Pixelvision led some artists into an exploration of film

and video beyond the conventions of Hollywood narrative film. It

expanded their thinking about the kinds of films they could make.

Because Pixelvision already looks different from conventional broadcast

video or Hollywood film, some users find it easier to break with

convention using the PXL 2000 camera.[5] Also, the examples of non-

conventional artists working in Pixelvision provide license for beginning

filmmakers to experiment. Kyle Cassidy says that shooting with the PXL

2000 helped him to see beyond the boundaries of conventional

filmmaking. With Pixelvision, Cassidy says he "jumped the tracks and

found a new set of tracks that I wouldn't have found otherwise."[6] By

"jumping the tracks," Cassidy means that he no longer felt confined by

the rules of conventional filmmaking. Experimentation with Pixelvision did

not cost Cassidy anything in terms of processing fees, and the video

playback mechanism provided him with instant feedback.

At the time that Cassidy was experimenting with the PXL 2000 as a

college student in the early 1990s, young filmmakers traditionally shot

on16mm black and white film, the cost of which Cassidy estimates to be

$200 per minute at the time. For students of Cassidy's era, celluloid film

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[5] Pixelvision's status as a toy is also relevant to some filmmakers who break with
convention. See chapter two for discussion.
[6] Cassidy, interview.

was still the standard for artistic work; video was not yet as inexpensive, accessible and easy to edit as it is now. With Pixelvision, Cassidy says, "I liked being self-contained, to not have to shop around to get money or to beg and borrow equipment from people. I was the master of my own destiny at that point."[7] Cassidy goes on to describe how he and a group of friends used the Pixelvision camera to produce a series of shorts, allowing them to experiment and to define their filmmaking strategies. In the span of time that it took to complete a formal 16mm film for a class project, they could produce eight or nine Pixelvision shorts at little cost.

In the early 1990s, Cassidy directed a Pixelvision short titled *Toy Soldiers*. Set in the Vietnam era, the short piece is about a boy whose fears about the safety of his soldier father are enacted through play with miniature toy soldiers. In a journal available on his Web site, Cassidy documented the process of making the video and then traveling to California to screen it at the 1996 PXL THIS Festival.[8] The Web site documents Cassidy's enthusiasm for shooting in Pixelvision; the day after the festival screening, Cassidy immediately began shooting another Pixelvision short in Los Angeles. The *Toy Soldiers Goes to Hollywood* Website is interesting because it documents a Pixelvision short from its conception, through the

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[7] Cassidy, interview.
[8] Cassidy, "Toy Soldiers Goes to Hollywood," <http://elvis.rowan.edu/~cassidy/la/>.

Kyle Cassidy's *Toy Soldiers*

shooting and editing process, to its eventual screening at PXL THIS.

Cassidy conveys the challenges and rewards of no-budget filmmaking,

but also the democratic nature of the Pixelvision circuit, which allowed

him access to means of production and distribution at little cost. Cassidy

used his own network of friends and family as actors and crew, edited the

short himself, and submitted it to PXL THIS. Cassidy paid his own way

out to Los Angeles for the festival premiere.

Obsolescence and Fetishization

What is the present status of the PXL 2000? The camera allowed for accessible videomaking in the late 1980s, but it has been overtaken by today's powerful digital technologies. The accessible means of production and distribution that were crucial to Cassidy's *Toy Soldiers* project are now taken for granted by those with access to consumer-grade digital equipment and digital editing suites. Because of the relative obscurity of the format and the availability of inexpensive, higher-resolution consumer formats, Pixelvision is no longer the tool of children and neophyte filmmakers. It is now strongly associated with artists and the pop cultural underground; the camera isn't as readily available to people without knowledge of or connection to these worlds. A number of the younger artists I interviewed discovered Pixelvision through their filmmaking MFA programs, the realm of credentialed artists and critics.

For better or worse, obsolescence is what defines the PXL 2000 camera today. One artist notes that "it has become this weird retro thing that people might mention on 'I love the 80s on VH1.'"[9] Since Pixelvision was only marketed for about one year, it has been technically obsolete for most of the time that artists have been creating with it.

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[9] O'Reilly, interview.

Among the artists I interviewed for this project, most have selected eBay as their marketplace of choice for Pixelvision transactions. At least two of the artists regularly track camera prices on eBay, and speculate that there is a cycle of rising and falling prices that repeats every six months.[10] Those who purchased their cameras on eBay paid prices of $100 to $300 on average; some then spent an additional $100 to $200 on modifications to the camera. Most do not consider these prices to be excessive. Ellen Lake says, "It is all relative. I would be sad if I paid $300 on eBay and it didn't work. If I pay $200 on eBay and I can make several films with it, then it is a good investment."[11] At these prices PXL 2000 camera is a less attractive video camera for beginners; the same amount of money can buy a current, low- or mid-grade digital video camera. Higher prices, combined with the effort needed to modify and maintain the cameras, undermine their potential to be a low-cost, though obsolete, video tool.

Users trade stories about finding PXL 2000 cameras at flea markets for $10 or less, but most agree that the days of flea market bargains have passed. Many have realized that the camera mechanism is indeed fragile, and have grown more protective of their cameras as the years pass. Owners perceive the cameras to be growing more rare and precious. One artist talks about his instinct to keep extra cameras around: "I've noticed

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[10] Ing, interview; Possert, interview.
[11] Lake, interview.

that I've been hoarding them. I used to give them away to friends... I'm more selfish now about keeping spares around in case I need parts."[12] Filmmaker Doug Ing has as many as six fully modified cameras, due to his fear that one of the cameras will break down in the middle of a shoot.[13]

Peggy Ahwesh is an established artist who rarely shoots in Pixelvision today, although she shot several pieces with the camera in the 1990s. She has a well-developed low-res aesthetic in all of her films, and found that the PXL 2000 camera worked well earlier in her career. Although Ahwesh still appreciates the Pixelvision look, she has moved onto other consumer formats, including spy cams and consumer baby monitors in order to achieve a similar low-res visual style in her current work. Ahwesh is one of the artists who suggested that there is a growing fetishization of the Pixelvision technology, as evidenced by the rising prices, the complex modifications and the perceived scarcity of the cameras: "For me, the impulse is to use whatever is out there and whatever is available... If it becomes way too much work, or way too expensive... You start to feel a diminishing return, especially if you have to buy some crazy obsolete thing."[14]

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[12] Cassidy, interview.
[13] Ing, interview.
[14] Ahwesh, interview.

While Ahwesh admits that good work can emerge from obsession and fetishization, she wonders if the Pixelvision movement can sustain itself and attract new practitioners, especially among the younger artists who do not have a generational tie to the format:

> "Lots of younger people are working with Nintendo or Sega stuff. It is very similar in that it relates to their youth. It is now not worthy of Wal-Mart, it is a throwback. [These obsolete formats] engender a certain nostalgia and pleasure in the viewer because we have been there. It's true with pop music, pop technology and it works across the board. Pixelvision already had its heyday in that sense."[15]

Ellen Lake, however, is not sure that direct nostalgia is important for the sustainability of Pixelvision as a format. Lake commented that she has never met anyone who owned a PXL 2000 camera in the late 1980s or early 1990s. She bought her own camera on eBay, sometime around 2000, and decided to make some short videos. She adds that she is slightly interested in the pop culture aspect of Pixelvision, but for her, the attraction is "more aesthetic than iconic."[16] Several artists that I spoke to believed that Pixelvision would continue to draw experimental filmmakers and artists interested in its aesthetic as well as its "anthropological appeal."[17]

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[15] Ahwesh, interview.
[16] Lake, interview.
[17] Cassidy, interview.

The PXL 2000 as Cult Object

Are the rising prices for the PXL 2000 camera a simple result of supply and demand? If so, what drives the demand for the camera? Does the appeal of the PXL 2000 go beyond its identity as either a toy or an artists' tool? As Peggy Ahwesh noted, Pixelvision enjoys a certain pop culture status. It is a marker of retro "cool," and an artifact of the cultural underground. The DIY (do-it-yourself) media culture surrounding Pixelvision is reminiscent of attitudes in zine culture or punk rock. How did this identity come to be constructed? How long will this identity be relevant?

Ahwesh refers to nostalgia as an element of Pixelvision's appeal. Instead of the term nostalgia, with its implications of subjective, personal experience, I would suggest the term retro to define the PXL 2000 as an artifact. The demand for the camera fits into a trend of increased consumption of retro goods, and is representative the postmodern valorization of low culture and kitsch.[18] However, I will not label Pixelvision as kitsch because of its shifting position in the cultural hierarchy, and its lack of mainstream presence. The PXL 2000 is more than a simple prop, and it is much more than a kitsch object. Retro is a better term because it encompasses the implicit judgment and valuation

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[18] For further discussion of retro consumption, see Franklin, "Consuming Design: Consuming Retro," 90 - 103 and Kirschenblatt-Gimblett, *Destination Culture*, 259 – 282.

of a class of objects that has been rejected by the mainstream and

appropriated by a subculture. After initial sale in the consumer market,

these retro goods pass through periods during which their worth is

defined and redefined according to the value placed on them by various

subcultures.[19] In *Destination Culture*, Barbara Kirshenblatt-Gimblett

describes the ongoing process of distinction involved in the consumption

of kitsch and retro objects: "What's out for the mainstream is cool for the

subculture, except that some rejects are cooler than others."[20] Susan

Stewart describes kitsch objects as being understood on the level of

"collective identity," rather than "personal autobiography."[21] If this is the

case, then is there a "collective identity" associated with the PXL 2000

camera?

A case could be made for a certain "collective identity" by exploring

some of the cultural references to Pixelvision in the commercial media.

These cultural references should be taken apart from footage or individual

videos shot in Pixelvision by individual artists. Many artists are shooting in

the format in order to achieve a certain aesthetic, and in these videos, the

camera is a means to an end. The works that are more relevant to a

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[19] For discussion of revaluation of retro goods, see Kirshenblatt-Gimblett, *Destination Culture*, 259 - 282 and Thompson, *Rubbish Theory*, 13 – 33.

[20] Kirshenblatt-Gimblett, *Destination Culture*, 275. The categories of "cool" or not "cool" are constantly shifting according to fashion, geographic region and subculture. Rather than debate the cycles of fashion to determine how "cool" Pixelvision still is among certain groups, it is more useful to examine how Pixelvision achieved this status in the first place.

[21] Stewart, *On Longing*, 167.

Michael Almereyda's *Hamlet* (2000): Hamlet shown in Pixelvision

discussion of Pixelvision's identity are those that explicitly feature the

camera on screen, or incorporate the camera itself into the storyline.

In a discussion of Richard Linklater's *Slacker* (1991) in chapter two, I

noted that the film incorporates about two minutes of Pixelvision footage,

and makes a link between the PXL 2000 camera and the cultural

underground portrayed by Linklater in the film. The technology itself is

clearly announced to the viewer, although the camera is not shown. In

Michael Almereyda's *Hamlet* (2000), the technology is not announced by

name, but the PXL 2000 camera becomes a key element of the Hamlet

character as portrayed by Ethan Hawke. In the film, Hamlet's solo

Michael Almereyda's *Hamlet* (2000): Hamlet shooting with his Pixelvision camera

videomaking is tied to his status as artist and alienated loner. His choice

of format, Pixelvision, can be read in opposition to the corporate world

represented by Polonius and his family's business empire, the Denmark

Corporation.[22] In these two films, the PXL 2000 is identified with the

slacker and the alienated youth; the camera is implicated in the politics of

1990s youth subculture as it tries to define itself in opposition to

mainstream culture and corporate media. When considered alongside the

seminal work of Sadie Benning[23], which deals with her coming out as a

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[22] Lanier, "Shakescorp Noir," 172.
[23] I mention Sadie Benning's work here not because she incorporates the camera into her videos, but because her work is so closely identified with the Pixelvision format. It

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lesbian, the camera emerges clearly as an object on the margins, a tool giving voice to people outside of the purview of the mainstream media. Pixelvision is the means of expression for those not represented in commercial films and television.

I mention *Slacker*, *Hamlet* and Benning's work specifically because they are three of the most visible examples of Pixelvision on the media landscape. For people only somewhat familiar with the format, these works tag Pixelvision with an identity beyond the quirky aesthetics of its image; this association with the underground provides the camera with its status as a cult object outside of its basic function as a tool. As a cult object, the PXL 2000 camera retains its aura of "retro chic" well beyond the visibility of individual films and videos made in the format, thus making the camera itself desirable as an object within certain subcultures. In his book *Notes from the Underground*, Stephen Duncombe discusses the alienation of the underground subculture from the products of mass consumption produced for mainstream society. He writes of the "separation between us, as individuals, and the entertainment and products we use, enjoy and derive meaning from."[24] Duncombe believes that the underground is trying to circumvent this sense of alienation by creating a more meaningful relationship between

could be argued that her work has had a great affect on how Pixelvision is understood by those outside the Pixelvision community.

[24] Duncombe, *Notes from the Underground*, 107.

themselves and the objects they create with and consume. As described in chapter four, members of the Pixelvision community put great effort into the maintenance of their cameras; they do not get the same sense of satisfaction from buying a popular product off the shelf. Pixelvision may be meaningful for some because of its association with a subculture that rejects mainstream consumer culture. Others may see the PXL 2000 more optimistically, as a way to engage with media in an effort to create meaning outside of corporate culture.

To what degree the PXL 2000 will retain its pop culture status is an open question. If artists continue to create with the camera, there will always be a small audience among the microcinemas and experimental festivals. The camera may lose its association with youth culture as 1990s slackerdom recedes and the culture of a new generation takes its place. However, Pixelvision will no doubt retain an aura of artistic rebellion into the twenty-first century and beyond, by dint of its very obsolescence. To shoot with the PXL 2000 is to celebrate the low-res analog image in a high-res digital world. As film critic Amy Taubin says, "Artists want to do things that break the rules of the mainstream. Just using this camera (the PXL2000) is breaking a kind of rule about what an image should look like."[25]

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[25] Taubin, interview, *Egg the Arts.*
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Twenty-first Century Relevance

Many artists fear that a surge in prices could curb activity around the PXL

2000 format and hinder creative work with the camera. Artist Kyle

Cassidy comments that collectors and technology fetishists may have

become interested in the cameras for the wrong reasons: "There is a

danger when something gets too rare or expensive [and] it gets picked up

by collectors rather than users. Once you've jumped that boundary, you

are in a dangerous world. In my point of view, having one as a status

symbol is bad."[26] Artists and filmmakers think it is important to create, or

to have the intention of creating, with the PXL 2000, rather than to

possess one for display purposes.

There is also the idea that the cameras will slowly disappear or wear out.

Artist Erik Saks has said:

> "Pixelvision is an aberrant art form, underscored by the
> fact that since the cameras wear out quickly, and are
> no longer being manufactured, it holds within itself
> authorized obsolescence. Each time an artist uses a
> PXL 2000, the whole form edges closer to extinction."[27]

Other artists take a different attitude, noting that creating Pixelvision

videos puts one in an interesting position of making the format both more

obsolete and less obsolete at the same time. Using the cameras may lead

them to break down and disappear more quickly, but using the cameras

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[26] Cassidy, interview.
[27] Saks, *Big Pixel Theory*,
<http://www.thekitchen.org/MovieCatalog/Titles/BigPixelTheory.html>.

also draws attention to the format and keeps it relevant in today's saturated media world. Modifications, which I will discuss in chapter four, complicate the intuitive premise that the cameras will eventually disappear in the natural course of use.

The PXL THIS Festival and the online forums devoted to Pixelvision help to sustain activity around Pixelvision as a format. The camera may be obsolete, but even in its obsolescence, it has not become a museum relic or a technological curiosity. The distributed activity around Pixelvision stands in contrast to the culture of Vinyl Video, a novelty technology that records and plays video on record albums.[28] The Vinyl Video technology resides in the avant-garde realm—the vinyl video players are expensive, limited edition pieces, and the means to record onto vinyl are limited. Working artists make pieces for the Vinyl Video player. Audiences purchase and play these works, reaffirming the traditional relationship between artist and audience. There are no Vinyl Video amateurs.

Given the activity surrounding the Pixelvision format today, how much has changed since the late 1980s? Pixelvision is no longer a format used primarily by children, nor is it the only format available for those looking to make video on the cheap. The format is not widely visible or available, but it was neither of these things when it was on the market in the late 1980s.

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[28] See <www.vinylvideo.com>

Even as a cult object, Pixelvision has stayed remarkably true to its roots.

While the same amount of money on today's market can buy a much

more sophisticated camera, the price of a PXL 2000, adjusted for

inflation, has not risen dramatically.[29] In an exchange on the PXL 2000

Message Board in March 2001, two users discuss Pixelvision's identity

crisis as it shifts between cheap camera and cult object:

User 1:
Found on eBay auction:

**Originally sold as a child's toy in the mid 1980s, these cameras have
acquired a devoted user base among pretentious videographers.**

Pretentious videographers! I know it's true but is it a selling point?

User 2:
**Haha! I'm glad to know that pretentious now means, "He who uses a
PXL 2000 due to the fact that he cannot afford a regular video
camera." Wow, I've went from cheap...to shiek [*sic*]. :P[30]**

For an obsolete technology, the PXL 2000 has not been consigned to the

trash heap, nor has it attained the rarified status of fetishized museum

object.

The status of the PXL 2000 camera as a retro cult object feeds into its

identity as an artistic tool outside of the hierarchy of consumer electronics

and mainstream media. In her book, *On Collecting*, Susan Pearce

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[29] A camera priced at $129 in 1988 would now go for $209 according to the inflation
calculator at <http://www.westegg.com/inflation/infl.cgi>.
[30] PXL-2000 Message Board,
<http://p221.ezboard.com/fpxl2000boardannouncements.showMessage?topicID=65.to
pic>, March 2001.

describes retro consumption as a process of finding value in the

discarded goods of a distant, or not so distant past. She describes this

process as a means of collapsing the categories of high and low culture

in the postmodern age.[31] Pixelvision complicates this idea because it is

more than an object to be displayed or consumed; it is an artistic tool.

Yet the art created with this tool has its own way of challenging

established ideas of art, entrenched means of distribution and the nature

of an image in the digital era. Pixelvision's obsolescence, vitality, and pop

culture status bring into question established ideas of high and low art,

and they position Pixelvision as an enduring form of "electronic folk art"[32].

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[31] Pearce, *On Collecting*, 290 – 307.
[32] Craig Baldwin, quoted on the PXL THIS Web site, <http://www.indiespace.com/pxlthis/pxlthis12.phtml>.

Chapter 4: Technology and Community

The PXL 2000 has been an object of perennial fascination to many since

its release in 1987. Even people who are avowedly non-technical find

themselves curious about the mechanics of the camera. Unlike today's

digital technologies, which tend to be inscrutable to the average

consumer, the basic workings of the PXL 2000 camera are transparent.

Most consumers are familiar with an audiocassette and what it does;

thus, the singularity of Pixelvision tape mechanism, which records video

onto standard audiocassettes, is clear to them.[1] They understand

immediately that the PXL 2000 is making use of the audiocassette in a

surprising and unexpected way. This initial transparency does not take

away from the sophistication of the PXL 2000 camera, or the

technological achievement it represents. The concept and the operation

of the camera are simple.

With each passing year, however, Pixelvision technology becomes more

complex with each passing year. Obsolescence presents its own set of

complications to the user, who has been left without any support from the

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[1] Familiarity with audiocassettes and magnetic media may be changing as they fade
from everyday use.

manufacturer, Fisher Price. While the PXL 2000 was on the market, Fisher Price served as a resource for users. The company sold accessories for the camera, including branded audiocassettes, and they serviced and replaced parts under the camera's warranty.[2] After withdrawing the PXL 2000 from the market, Fisher Price abandoned the technology, relegating it to the trash heap. In the mid-1990s, neither Fisher Price nor James Wickstead, the inventor of the camera, had any idea that it had been picked up a number of artists and amateur video practitioners. [3]

The PXL 2000 camera represents the pitfalls associated with proprietary technology, and the precarious position of the consumer who makes an investment in experimental or non-standard equipment. Corporations market their technologies and products to consumers with the hope of attracting a critical mass of users, but if the critical mass of users fails to materialize, the ultimate result is product failure. In the case of non-standard or proprietary technologies, consumers are left with no support for their continued use of the product. The history of amateur film equipment, and the larger history of photographic technology, is populated by fascinating instances of failed technologies, of standards that were never adopted by the industry or by consumers. The Kodak

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[2] Moore, interview. Moore talks about taking advantage of the Pixelvision warranty and sending away for branded accessories.
[3] Revkin, "As Simple as Black and White."

Disc Camera is an example of a failed technology that was on the market at the same time as the PXL 2000.[4] The product most closely related to Pixelvision in the realm of home video is the Polaroid Polavision system, a proprietary technology that offered instant development and playback of moving images on Polavision phototape. Like Pixelvision, Polavision was an unsuccessful attempt to exploit an immediate playback function for amateur moving images.[5]

The above technologies failed because they were not widely adopted by consumers. They differ from formats such as regular 8mm and Super 8mm film, which were the standard formats of their eras for both consumers and manufacturers. These formats were replaced in the inevitable course of technological advancement. In 2005, Kodak is still supporting the Super 8 format through production of Super 8 film stock; in decades past, several companies manufactured cameras and projectors for this format. Super 8 filmmaking never relied on proprietary camera or projector equipment; in the present day, it is not yet obsolete.[6] Pixelvision is an interesting format because relies on a proprietary recording and playback mechanism, but is compatible with a standard recording medium: the audiocassette. Failed technologies like the disc

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[4] The Disc camera was marketed by Kodak from 1982 to 1990. The camera used a circular disc film cartridge.

[5] For more information on Pixelvision, see Czack, "Polavision Instant Movies" and Kattelle, *Home Movies*, 189. Polavision was a colossal failure for the Polaroid Company.

[6] There is still a robust community of filmmakers supporting the Super 8 format. Some Pixelvision artists also shoot with Super 8 film.

camera and Polavision depend on proprietary camera equipment as well as proprietary recording media in the form of disc film and Polavision Phototape cartridges. Even after Fisher Price withdrew support from the camera, Pixelvision was adopted by users who were familiar with and had access to the audiocassette, the dominant consumer audio support in the 1980s. The audiocassette has become less important to the survival of the format today, but its importance to the camera's initial survival cannot be underestimated.

Pixelvision: An Art World

In *Art Worlds*, Howard Becker wrote about art from a sociological perspective, taking into account the role of an artist, the conventions upon which a works of art is built and the often-invisible support network upon which a work of art depends. Becker's theory is an interesting lens through which to look at the adoption of the PXL 2000 by a community of users after its initial abandonment by Fisher Price.

Becker pointed out that all works of art depend on materials and equipment of some sort, and that the role of these manufacturers is important to the eventual production of any work. According to Becker, standardized and reliable equipment facilitates the creation of art: "Manufacturers, suppliers and repair people constitute a stable and quite

conservative segment of any art world…"[7] These manufacturers tend to be taken for granted by artists and consumers. When an equipment manufacturer abandons the role of providing materials, artists must make adjustments in order to continue their art. In the case of Pixelvision, a community developed to support the format in its obsolescence. This community represents an art world in that it is made up of members who have assumed a variety of roles, the most prominent of which are users/artists, modifiers/technicians and curators.

Before moving on to explore these roles more fully, it is important to define the term community as it applies to Pixelvision. Recent articles by academics and the popular press have seen all manner of explorations into the nature of community.[8] The development of the Internet has refuted lingering notions of community as an exclusively geographic or civic concept. I would posit that Pixelvision users, including amateur practitioners, artists and modifiers of the technology, make up a community of practice.

The *International Encyclopedia of Social Behavioral Sciences* defines a community of practice as "a group of people who share an interest in a

[7] Becker, Howard, *Art Worlds*, 59.

[8] Etzioni, "Sociology of Communitarianism," 2339. The encyclopedia cites a twelve fold increase in the number of articles about communitarian thinking in the popular press during the course of the 1990s.

domain of human endeavor and engage in a process of collective learning that creates bonds between them: a tribe, a garage band, a group of engineers working on similar problems."[9] The definition goes on to list a few characteristics of this kind of community, including focus on a specific domain, members with a certain amount of knowledge on the subject, and the communication and development of knowledge as a shared resource for its members.

Using this definition, the Pixelvision community can be fairly represented as a community of practice, the existence of which is dependent on the Internet. The Internet serves as the primary means of communication and support for members of the Pixelvision community; there are two active online fora for discussion and communication about the PXL 2000 camera, as well as a host of static Web pages offering information for users and fans.[10] The online fora and Web sites make up a constellation of Pixelvision-related information on the Internet, providing opportunities to communicate with others and to share knowledge. The resources include instructions for modifying the cameras, links to other pages, information about films and videos shot in Pixelvision and electronic files

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[9] Wenger, "Communities of Practice," 2339 – 2340.

[10] The two online fora are the Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/> and the PXL-2000 Message Board, <http://p221.ezboard.com/bpxl2000board>. The Pixelvision Mailing List is by far the most active of the two fora. A list of static Pixelvision Web sites can be found in the Bibliography. Some of the static Web sites are updated infrequently, if at all.

with patent information, photographs and scans from the original book of instructions.

Perhaps the most consistently active posters to the Pixelvision online fora are those involved in the buying, selling and modification of the cameras. Much of the activity consists of camera owners trading tips on modification strategies in order to make the camera compatible with contemporary video equipment and digital editing systems. Newcomers to the list frequently post to ask where they can buy a camera, or how they can modify one. Discussion threads about larger artistic issues such as aesthetics or content are less frequent in these fora; the energy of the community is mainly focused on the technology and how to maintain it. According to Becker, this focus on the technology is natural: "Insisting on nonstandard equipment, [artists] have to devote time that might otherwise be spent making art to making its material precursors."[11] Lacking recognition and support from Fisher Price and from the larger video production community, members of the Pixelvision community are on their own to support their adopted technology, to gather knowledge and to maintain a greater awareness of the format in the digital era. On the whole, the members of the community are focused on process rather than product— the experience and knowledge they gain through

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[11] Becker, Howard *Art Worlds*, 76.

modifying the camera are valued more than the footage ultimately produced.

Circuit Bending: Modifying the PXL 2000

With each passing year, PXL 2000 cameras, which were never designed for longevity, are prone to break down, and need tune up and repair. The process of modifying the Pixelvision camera is known as circuit bending. Circuit bending, which is traditionally associated with musical instruments, is defined as follows: "...the creative short-circuiting of electronic devices such as guitar effects, children's toys and synthesizers to create new musical instruments and sound generators."[12] Within the Pixelvision community, the practice of circuit bending has nothing at all to do with music, but I believe the definition can be stretched to include those not working with music. The circuit benders within the community often modify a variety of analog technologies, including musical instruments and children's toys. For many practitioners, the fascination with circuit bending is neither medium-specific nor narrowly focused on music; it combines a fascination with technology with larger aesthetic and economic concerns:

> "My fascination with mods is simply the ability to alter, or
> to enhance equipment that I enjoy using, rather than
> trying to reinvent the wheel. I began modifying as a way
> to build my video and sound equipment as well as to

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[12] Definition of circuit bending from Wikipedia,
<http://en.wikipedia.org/wiki/Circuit_bending>.

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achieve sights and sounds not readily available. My budget has played a great role, as I'm not able to afford the film and sound equipment professional studios employ."[13]

The circuit benders within the Pixelvision community all began with an initial curiosity about the camera, and a DIY (do-it-yourself) inclination to tinker with technology: "I just have this natural tendency to take apart gear that I get, old gear, to see what else you can get out of it. It's just natural curiosity."[14] The circuit benders have become an integral part of the Pixelvision community, providing much-needed technical support to both beginners and advanced Pixelvision videomakers. Users can send their cameras to the circuit benders for repair and modifications. Prices start as low as $50 for a simple tune-up, but more complex modifications can run into the hundreds of dollars.

The circuit benders are not anonymous members of the Pixelvision community by any means. They are frequent posters to the online fora, freely sharing advice and supporting newcomers who are trying to make modifications on their own. Circuit-bending Web pages also provide instructions on making modifications to the cameras. Basic information circulates freely among the community, although some circuit benders may not share information about the more innovative or complex modifications that they have developed.

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[13] Gill, interview.

[14] Palmer, interview.

The Pixelvision community is based on the free exchange of information. While some circuit benders may charge for their services, they ultimately benefit from activity and information sharing on the electronic message boards. Newcomers might unsuccessfully attempt a modification, and then send the camera out for repair. Some circuit benders use the online fora as a means to establish credibility and to keep their name in circulation; others are interested in the conversation and exchange of information on a topic they hold dear. Patrick Gill, a very prominent circuit bender within the Pixelvision community, posts frequently to the message board. He chimes in occasionally with advice, and also posts messages advertising his services. Communication on the electronic message board ultimately serves one of his larger goals as a circuit bender: "I found these great cameras were rapidly deteriorating, even when properly stored, and decided to try and keep them in circulation through restoration."[15]

Mods

The PXL 2000 cameras were not built to last in the same way as expensive photographic equipment— the cameras are cheap and plastic. However, they were built with to withstand a certain amount of wear and tear from their target demographic of children. Twenty years on, the tape

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[15] Gill, interview.

mechanism has proven to be finicky, but the cameras on the whole are fairly hardy objects. However, almost every camera that is picked up nowadays, even those that are barely used, will be in need of some calibration and tuning. On the whole, circuit benders are confident that they can restore the majority of cameras they encounter to working condition.

According to Ryan Palmer, a circuit bender who does repairs on the PXL 2000, the cassette mechanism is the most fragile part of the camera, and the one to wear out first. He tries to repair or tune up this mechanism so that it functions as well as it did when the camera was new. The other basic repair that many circuit benders perform is the removal of the "blue chip," an infrared filter that sits behind the lens. The blue chip decomposes and becomes cloudy over time, which affects the resulting image; most people find that the camera image is clearer and its light sensitivity improved once the chip has been removed.

After basic repairs, modification is the next step for many PXL 2000 owners. The most common modification is the addition of RCA composite video outputs, which allow export of the Pixelvision image to another support or to another format. In many cases, the ultimate
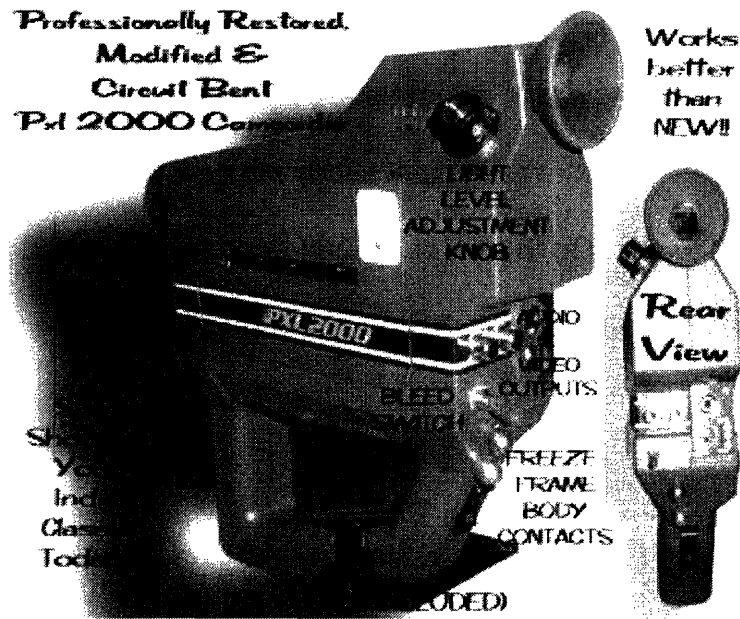
Patrick Gill offers these modifications for the PXL 2000

destination of the image is the digital editing program of a computer.[16]

Many users want to edit Pixelvision digitally, in order to mix it with

conventional video or for the ease and convenience of non-linear editing.

Many of the younger Pixelvision users are totally unfamiliar with the

analog editing process. More complex modifications follow on the heels

of the basic composite video mod. On his Web site, Patrick Gill offers

modifications including a light level knob, a jack for an external

microphone and various controls allowing for fades, bleeds and stop

motion.[17] Another practical modification is the addition of an electronic

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[16] The original PXL 2000 camera came with an RF adaptor switch that connected to the television and played on channel 3 or 4. This RF adaptor was similar to the one used for video games of the same era.

[17] Gill's Web site can be found at <http://bentstruments.com/pxl/pxl.html>.

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viewfinder to the camera, which allows for greater accuracy when shooting.

A few of the modifications bring Pixelvision into the realm of more advanced photography. Ryan Palmer and others are experimenting with the infrared possibilities of the camera. With the removal of the blue chip, the camera is infrared-sensitive. Palmer has been playing with various infrared filters to block regular light in order to achieve infrared moving image photography in Pixelvision. Others have removed the standard Pixelvision lens in order to mount more sophisticated lenses that allow for focus adjustment.[18] For some, this modification is a way to make the camera more "professional." Michael Almereyda is said to have modified the lens of his Pixelvision camera for one or more of his commercially released films. One circuit bender posted the following message to the PXL 2000 Message Board in April, 2002: "I just got done doing the first interchangeable lens modification to my PXL. Obviously, that incredibly cheap single element plastic lens (it probably cost $0.01 to make) has just got to go!"[19] However, modification of the lens can be an area of disagreement for circuit benders. Ryan Palmer strongly discourages

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[18] C-mount lenses and small lenses from surveillance cameras are common replacements for the standard Pixelvision lens.

[19] PXL 2000 Message Board, <http://p221.ezboard.com/fpxl2000boardpxltechquestions.showMessage?topicID=124.topic>. April 24, 2002.

customers from modifying the lens at all.[20] There is always an

element of experimentation in modifications, a spirit that leads someone

to ask, "how does this work?" or "what can I do to improve it?" However,

many people agree that the lens is the most unique aspect of the PXL

2000 camera, and don't believe it should be touched. Filmmaker Michael

O'Reilly says, "I understand the motivation but I think they are missing the

point of the whole camera; it already has its own really cool lens."[21] The

aesthetics of the PXL 2000 lens will be discussed further in chapter five.

Pixelvision modifications are a study in the unintended uses of a

technology, and how a product can grow beyond the demographic

targeted by its corporate manufacturer. Palmer says, "When equipment is

designed, it is not designed for niche markets. They try to be as broad as

possible in the design."[22] Palmer goes on to say that modifications allow

him a to tailor the product to his own needs, or to the needs of the

eventual user. However, not everyone who performs equipment

modification indulges the perceived needs of the user. Engineer David

Riddle works on audiovisual equipment for the film and TV industry and

has refused to perform modifications on the PXL 2000 camera: "I said

that I would no longer fix them because they were not designed to do the

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[20] Palmer, interview.

[21] O'Reilly, interview.

[22] Palmer, interview.
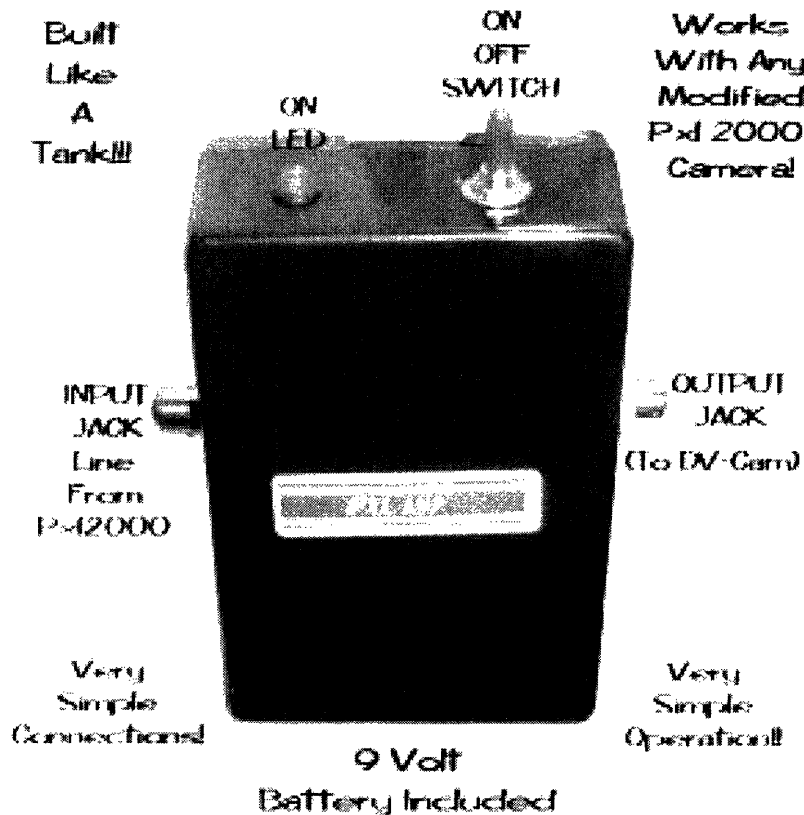
Gill has designed a signal amp for conversion from Pixelvision to DV

kind of work the clients wanted to do."[23] Riddle, however, is far removed

from the circuit bending community— he works exclusively with

professional equipment and is not attracted to low-res aesthetics. To

Riddle, the PXL 2000 is not at all charming. "It's an absolute piece of

junk," he says.[24]

One question arises from the deterioration and resulting modification of

the PXL 2000 cameras: has the standard Pixelvision image shifted over

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[23] Riddle, interview.
[24] Riddle, interview.

time? Does the image from a modified camera today look different

from the image out of a brand new camera in 1988? While circuit benders

may be able to restore the camera to working condition, does the

decomposition and removal of the blue chip change the appearance of

the image? With growing variation among cameras as they age, is it

possible to define a standard image across a group of working cameras?

Circuit benders say that the image from today's modified cameras is

identical to the image from a brand-new 1988 camera. Palmer says that

the camera parts are fairly stable, and that nothing ages to the point that

it would affect the image. He adds that a stable, standard image is

achieved with skillful calibration of the camera mechanism with an

oscilloscope. This tune-up makes "the blacks black, the whites white and

captures all the grey tones in between."[25]

The RCA composite video output is one modification that has had a

marked effect on the aesthetics of the Pixelvision image. The RCA output

allows users to capture the image on another camera; cables connected

to the PXL 2000 export the Pixelvision video out to the second camera.[26]

Many users prefer to circumvent the finicky tape mechanism of the PXL

2000, and with the RCA outputs, they can avoid audiocassette tapes

altogether. When connected to a consumer mini-DV camera and

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[25] Palmer, interview.

[26] This two-camera rig was used by Ethan Hawke's Hamlet character in Michael
Almereyda's Hamlet.

captured on mini-DV videotapes, Pixelvision is no longer analog video.

The image is now digital from the point of capture; ultimately, it becomes

a binary sequence with only a file extension to signal it as a moving

image. If this digital file represents the future of the PXL 2000, then the

image will have shifted very much from the way it looked as shot on an

audiocassette in 1988.

Many Pixelvision aficionados would agree that there is an aesthetic

difference between images shot on cassette tape and images captured

digitally. The digital image looks smoothed out, and it is also sharper,

with no analog artifacts. Some people find that the digitized Pixelvision

image looks more professional and is easier to watch. Others prefer the

purity of the analog image, even if it is transferred to a digital format after

capture. If the image is born analog and later transferred to digital, some

analog artifacts remain, giving the image the "traditional" Pixelvision look.

While there will always be analog holdouts, the new, sharper digital image

will become the look of Pixelvision in the future. Most would see the

aesthetic shift to the digitized image as a small price to pay for the

survival of the format.

Artists / Users

Along with the circuit benders, PXL 2000 users are another major component of the Pixelvision community of practice. These people are shooting footage, making videos and buying and selling cameras, and they make up the bulk of the activity on the online message fora. Users are trying to navigate the complexities of shooting and editing footage with an obsolete, analog camera: finding cables, making modifications, outputting an image from the camera, fixing the inevitable glitches. When discussing users within the Pixelvision community, it is important to note the slippage of roles among the participants. Information is welcome from most any source, and roles can change according to context: some circuit benders shoot footage and make videos while some users become circuit benders of varying experience and ability. Users are operating in uncharted territory, and even so-called experts may find themselves chiming in with advice on an unexplored topic or sharing news about a discovery.

A recent thread on the Pixelvision Mailing List included more than twenty posts among six users and circuit benders, as they parsed through the compatibility issues involved in using the PXL 2000 camera outside of the United States. Because the PXL 2000 was created for American NTSC standards, users abroad face challenges in making the camera work with

non-NTSC equipment. In the recent posts, a new user in England queried

the list about the possibility of modifying the camera to output a PAL

signal. He quickly learned that this modification is nearly impossible. He

then decided to take another approach, and continued to update the list

about his efforts, documenting his successes and failures during the

process. Here is an excerpt from a message on April 6, 2005:

User 1:
Approach 1
**I found out about the limitations of the DAC100 from datavision. I
have ordered a Canopus ADVC-100 and so I will report back at the
end of the week.**

**By the way, it is all worth it because the images from the camera are
beautiful (like pinhole video) and because I am learning so much
during the journey.**[27]

A sense of appreciation for the "journey" is necessary in what can

be a frustrating process for those unfamiliar with the world of

coaxial cables, video standards and frequent trips to Radio Shack

for nearly-obsolete analog equipment. The experience can be

doubly frustrating for users abroad who are not working with the

same standards as American users. The community provides a

means of connecting to others who can help, or who can

commiserate. In the course of the above exchange, two users in

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[27] Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/message/993>,
April 6, 2005.

Great Britain were able to connect:

User 2: Wow! Someone else in England with a pxl camera! Crazy!

User 1: Hello. Are we the only ones? Perhaps this is why the PAL question has not been raised before? How do you transfer your footage?[28]

User 1 in the above exchange eventually achieved his goal of working with Pixelvision's NTSC signal in his PAL world. Posts from circuit benders and other users helped him find a solution after a series of trial and error experiments. The posts remain on the message board for others to use as a resource.

In many cases, it is possible to send the camera out to a circuit bender to make the necessary modifications. However, many users would prefer to make a pass at it themselves, either to save money or as a way to learn more about the camera. The following post, titled "PXL Problems! Help!" from January 4, 2005 is illustrative of the initial DIY approach of many users, as well as the desperate feeling of being on one's own with no technical support for a beloved tool:

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[28] Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/message/985>, April 5, 2005.

ok, more or less I'm a lurker on the page, but I've had my pxl for about two years now and I've loved it, and recently i noticed the tape recording was gettin' fuzzier and fuzzier, I sent it to a friend of mine who said he'd know how to fix it, and i got it back with a couple problems, the case just near the tape play buttons was cut open exposing the trim pots, (YIKES) and the pots were apparently turned a bit as that even tapes recorded prior to being sent out are just bands/pixels/slow garbled sound, ... now as well as the afore mentioned problem I'm getting some severe issues with the tape motor... please, if anyone out here knows possible fixes/repair jobs, i'm more than willing to attempt on my own or possibly send out... PLEASE HELP!, if someone could even just give me info on these three pots and what they do, and if they could be the cause of the tape motor problems... please email me...[29]

For most of the users, the ultimate goal is to have a working camera, but not to pay a fortune for it. Most users tend to purchase their cameras on eBay auctions or from other community members, and then begin the process of repair and modification. Fully modified cameras are available on eBay or from used camera dealers, with prices from $400 to $600.[30] Yet the ideal is to find a camera on the cheap, and users will often trade stories about how much they paid for their camera; those who manage to find a PXL 2000 for under $20 are understandably proud of their achievement.

[29] Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/message/912>, January 4, 2005.

[30] On May 3, 2005 a fully modified camera was selling for $389 on eBay, with 3 days left on the auction. On the same day, a used camera dealer was offering a fully modified PXL camera with interchangeable lenses for $545, <http://www.cinematechnic.com/products/sales_cameras.html>.

The electronic message boards are a good place for users

seeking a fair price on for PXL 2000. Sellers will monitor eBay to see

how much the cameras sell for, and then adjust their prices

accordingly; many will name a fair price for others in the

community:

I looked up the pxl 2000 on ebay and I figure $120 would be fair if I pay the shipping. I am in San Diego. Let me know what you think. I am pretty sure it has never been used because the original batteries are still in the box. As I said I can send pictures if you would like. [31]

If the above camera was never used and was in the original box, then

$120 is indeed a very good price. The seller could probably get much

more for the camera in an eBay auction. Other sellers are concerned that

their cameras find a good home with an active user:

**i've got one. it's in great condition. comes with the original adapter. i love it, but it should be with someone who, dare i say, NEEDS it.
price negotiable.
i know you're out there.[32]**

Some users rail against the high prices charged by collectors, dealers

and other Pixelvision users who are out to make a buck. A thread titled

"Wall of Shame" on the PXL 2000 Message Board includes links to eBay

dealers who are charging too much for the camera.[33] Users will post their

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[31] Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/message/982>, April 3, 2005.
[32] Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/message/888>, October 26, 2004.
[33] PXL-2000 Message Board, <http://p221.ezboard.com/fpxl2000boardannouncements.showMessage?topicID=65.to pic>, thread begins on November 11, 2000.

displeasure to sellers whose prices are perceived to be too high:

You have to be kidding. 250 bucks? There are people selling them every week for less than that. [34]

Users understand that the PXL 2000 is "a perennial collector's darling"[35],

and that the perception of the camera as a collectible item rather than a

tool can drive up prices. Dealer descriptions of the cameras will often

point out their rarity, and charge very high prices for mint cameras with all

of the original accessories. The community provides an alternative to

eBay dealers. Although would-be users will not find cameras at flea

market prices, some sellers within the community are charging

reasonable prices to others who wish to go out and experiment with the

PXL 2000.

While exchanges on the online fora are mostly focused on the

technology, some discussion of art and aesthetics makes its way into the

discourse. These exchanges tend not to be sustained for a long period of

time. However, users understand that the modification and use of the

technology has a direct effect on the ultimate aesthetics of the final

product, and some users are very concerned with achieving their

aesthetic goals. A discussion on the Pixelvision Mailing List in October

[34] Pixelvision Mailing List, <http://groups.yahoo.com/group/pxl2000/message/862>, September 7, 2004.
[35] Langille and Sterling, "Dead Medium: The Fisher Price Pixelvision", <http://www.deadmedia.org/notes/35/357.html>.

2004 acknowledged the aesthetic differences between capturing

Pixelvision images on an analog vs. a digital format.[36] Users will

sometimes post links to short videos they have created, or alert each

other when Pixelvision footage is spotted in a commercial film or a music

video. More theoretical discussions of art and aesthetics take place on

Frameworks, an Internet message board devoted to experimental film,

and those interested in theoretical and content-based discussion tend to

congregate on there. While discussion of Pixelvision is only episodic, the

general focus on the subject of experimental film is satisfying to

Pixelvision users seeking a more intellectual or historical approach to the

format, or to film and video art in general.

Curators

A third constituency in the Pixelvision community of practice is made up

of those who make videos and information available to a larger audience,

in order to increase the accessibility and visibility of the format in the

larger world. To some extent, many of the participants in the online fora

are performing the function of making information and videos available. A

few members link to sites with their shorts, or they post information about

the format. Circuit benders make information about modifications

available on their Web sites. The group that I am specifically referring to is

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[36] Pixelvision Mailing List, < http://groups.yahoo.com/group/pxl2000/message/880>,
thread starts on October 13, 2004. For more discussion of the differences between the
digital and analog image in Pixelvision, see chapter five.

a small component of people who are collecting videos and information and making them available in a systemic manner. They are facilitating access to information about the format.

Gerry Fialka of the PXL THIS Festival, which I discuss more fully in chapter two, curates a festival of Pixelvision shorts annually, and makes a great effort to circulate the festival to venues across the country each year. His website is a font of information about Pixelvision and the PXL THIS Festival. Fialka has posted links to press articles, lists of shorts included in each edition of the festival and a small gallery of Pixelvision shorts to be viewed online. Smaller festivals, including the Coney Island Short Film Festival, 20,000 Leagues Under the Industry and others, are open to screening Pixelvision. The moderators of the Pixelvision Mailing List have assembled a page of links providing Web pages and resources for Pixelvision users.[37] And Precious Realms Production, a small production company, assembled a compilation DVD in 2003. The producers of the compilation posted to the Pixelvision Mailing List to encourage users to submit videos for the project, which included a second DVD of extras: interviews with Gerry Fialka and James Wickstead,

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[37] See the Bibliography for Web links to these resources.

an essay about Pixelvision by filmmaker Michael O'Reilly and other information about the camera.[38]

These curatorial efforts are marked by their participatory nature and their reliance on an active and interested community of Pixelvision users and fans. We come back around to Becker in this case, as it becomes clear that the Pixelvision community of practice resembles what Becker would term as an art world:

> "The nuclei of ...new art worlds grow up around what
> the more conventional system does not handle. The
> development of new art worlds frequently focuses on the
> creation of new organizations and methods for
> distributing work."[39]

In this case, the Pixelvision community has created its own system for distributing works and information about the format which lies outside of what Paul Hirsch, and later Becker, classified as the traditional "culture industries," which distribute works of art for profit.[40] Videos by Pixelvision users are, for the most part, distributed through grassroots means, and their distribution depends on the energy and devotion of curators and community members. In the areas of both technical support and

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[38] Sadly, Precious Realms is now defunct, and the producers of the DVD cannot be reached. Members of the community hope that the DVD will become available again in the future.

[39] Becker, Howard *Art Worlds*, 129.

[40] Hirsch, "Processing Fads and Fashions," 642; Becker, Howard *Art Worlds*, 122.

distribution, this community lies outside of the reach of corporations and the culture industry.[41]

Existing outside of the mainstream media, the Pixelvision community must pull audience members from its own ranks and from the wider community of underground culture and experimental filmmaking. Becker articulated very clearly the important role of audience members within an art world. Audience members are those who are familiar with and support the conventions of the art world. It is important for audience members to have some knowledge of the conventions of Pixelvision, if only to avoid the awkward comparison of Pixelvision videos to the high-resolution, broadcast-quality images of television and Hollywood films. Fialka of PXL THIS tells a story involving an audience member who asked if Pixelvision users could use digital technology to "fix" the Pixelvision image.[42]

The DIY Ethic

The DIY (do-it-yourself) philosophy is firmly entrenched in the Pixelvision community, and it is probably the one ethos around which the diverse membership can unite. The roles of users, circuit benders and curators all require elements of independence and DIY spirit, as well as energy and a desire to operate outside of the established norms. This commitment to

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[41] See chapter two for a discussion of Pixelvision's relationship to the professional filmmaking industry and to the traditional New York art scene.
[42] Fialka at CMS Colloquium on Pixelvision, March 3, 2005.

making one's own culture exists in other subcultural communities as well. In writing about the world of alternative zines, Stephen Duncombe brings up the concept of emulation, which he describes as "turning your readers into writers."[43] The same concept could be extended to the Pixelvision community, where members support and encourage each other to get their cameras in working order, and then to go out and shoot Pixelvision footage. Gerry Fialka is an especially engaging proselytizer for creation with the PXL 2000. He tells people that once they have a camera, all it takes is $5: they can buy a cassette tape, make a video, submit to his festival, and "still have enough money to buy a burrito for lunch."[44]

The Internet has proven itself to be crucial to any number of DIY projects involving Pixelvision, from circuit bending to videomaking to putting together a festival. It is the primary means of support for newcomers to the community, who may not know anything about how to get the camera in working order, how to make modifications or how to find an audience for their work. Kyle Cassidy started the first Pixelvision email list in 1996, and it eventually grew to include "a couple hundred people."[45] They shared movies and repair tips, and eventually put together 2 compilation

[43] Duncombe, *Notes from the Underground*, 123.
[44] Fialka at CMS Colloquium on Pixelvision, March 3, 2005. Fialka may need to adjust his prices for inflation.
[45] Cassidy, interview. Cassidy's mailing list has been superseded by the two online fora discussed in this chapter.

tapes of Pixelvision work. The Internet also provides the means for the

community to refresh itself with new members. The electronic fora, the

circuit-bending Web sites, and eBay are integral to an active community.

The innovative modifications taking place within the community are a

study in the unintended use of a technology, and the evolution of

Pixelvision from market failure to viable digital format is a testament to

the energy of the users who have picked up the format. The curiosity and

energy of circuit benders and other members of the community have

produced a symbiotic relationship between old and new technologies; an

example of digital media keeping alive the spirit of the analog format,

instead of suppressing it.

Chapter 5: Pixelvision Practice

The majority Pixelvision artists that I interviewed for this study admitted to

harboring an equipment fetish— but not only for the PXL 2000 camera.

For the most part, these artists are interested in, and create with, a variety

of formats including digital video, 16mm film, super 8 film, found footage

and animation. Artist Dwight Swanson remarked:

> "[Pixelvision] is a total fetish. But on the other hand,
> Pixelvision people are also interested in other low-res and
> analog forms too. I don't think anyone is invested in just
> Pixelvision. It just seems like it is a good touch point. It is
> common enough that there is some sense of community…
> and you can get access to the cameras easily."[1]

The artists repeatedly made reference to Pixelvision as an artistic tool, as

one camera of many that they use to create moving image art. One artist,

who started his career as a painter, made reference to his "palate of

cameras," while another referred to the PXL 2000 as "another weapon in

my arsenal."[2]

During the interviews, the artists tended to emphasize the importance of

using the Pixelvision aesthetic to enhance the content of their work. The

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[1] Swanson, interview.
[2] Konefsky, interview; Possert, interview.

point is not to have the technology become more important than the artwork itself— to be sure that the technology serves the content and message. One artist notes that when trying to choose between formats, "it comes down to the story... [and] what I am going to do with it... Pixelvision is different from other formats, and [the image] is as good as it is going to get. You can't make the image better—it is only going to get worse if you tinker with it too much."[3] Another artist says that Pixelvision "is one way of telling [a] story and getting it out there. You could do something else, but this is one way."[4]

Thus far, I have focused on the PXL 2000 camera itself, as a toy, an artifact or as an artistic tool, and its changing status over time and among social groups. But what do the films and videos themselves tell us about the evolving conventions of Pixelvision practice? Does the camera lend itself to being used in a particular manner? Is there such a thing as a Pixelvision aesthetic? A closer analysis of the Pixelvision work sheds light on these questions.

Choosing films and videos to represent larger trends in Pixelvision is not an easy task. Films belonging to the more commercial end of the spectrum, such as the films of Michael Almereyda, are well-known and

[3] Possert, interview.
[4] Cassidy, interview.

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easily accessible. One can find copies at a local video store or order them on the Internet. However, these films are not at all representative of the larger body of work by Pixelvision artists and amateur filmmakers. The PXL THIS Festival is more representative of the diverse work being done in the Pixelvision format because the vast majority of Pixelvision works are short films by artists and amateurs. Most users have neither the resources nor the desire to do a feature length piece in Pixelvision. But it is almost impossible to gauge how much work is done in the format and not submitted to the PXL THIS Festival. Some artists have alternative means of distribution; some amateurs may prefer not to screen their videos to audiences beyond immediate family and friends.

Aside from the commercially available films, viewed by many in the community, it is difficult to determine a consensus among Pixelvision filmmakers on the works that best represent the format. Some artists and users are only marginally familiar with other work being done in Pixelvision. They may take in shorts here and there, or they may be familiar with works included on the Precious Realms DVD compilation; newcomers to the format may not have any knowledge of earlier works. While I have made an effort to watch a good number of Pixelvision films and videos, I don't claim to have seen all, or even a majority of the work

ever made.[5] Instead, I will focus on a few films and videos that I have viewed, and that I find notable, making no claims to choosing definitive examples.

The Purists

The PXL 2000 video camera, even when modified, is marked by its simplicity. As a technology, its range is limited. When picking up the camera, a filmmaker must learn to recognize, and to work within the limits of the image. A successful user exploits the technology through lighting and camera placement, and must also focus effort on the construction of his or her idea because "a horrible story is a horrible story no matter what it is shot on."[6] Users try to take advantage of what the camera does well. Some push its boundaries with modifications, while others embrace and exploit its quirky aesthetics.

Pixelvision videos are becoming technically sophisticated as a result of the rise of digital editing. Yet within Pixelvision practice, there is a tradition of short, simple pieces with in-camera edits and no added effects. PXL THIS organizer Fialka refers to these as the "purist" works. Due to the growing trend of camera modifications and repairs, as well as

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[5] Gerry Fialka has donated submission tapes from each PXL THIS Festival to the Academy Film Archive. The public can access these tapes in their Film Study Center. This collection is probably the biggest collection of Pixelvision work in existence.
[6] Possert, interview.

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the declining relevance of the VHS format, these "purist" videos are not as common as they were in the early days of the camera. A Pixelvision purist would be a user who shoots and edits in the camera, with the original camera audio, and makes a video no longer than the length of one cassette. The purists confine themselves to the same technical limitations as the average home user in the late 1980s, who may or may not have had access to a VHS recorder, let alone any kind of advanced video editing equipment. Gerry Fialka cites a Baltimore artist named tENTATIVELY, a cONVENIENCE (tENT) as an artist who practiced in the purist vein early on. tENT organized a series of Pixelvision shorts known as the Philosopher's Union Members Mouthpieces in the late 1980's. Various members of the Philosopher's Union would stand in front of the PXL 2000, the lens trained in close to the member's mouth. The short consisted of them speaking some sort of treatise or speech for the length of one tape, approximately five minutes and thirty seconds. There were more than seventy tapes made in this series, of a proposed 50,000.[7] tENT's project reminds us of Pixelvision's roots in video art. Many users find the purist approach incompatible with the stylistic approach needed for the conventional narratives adopted in many short films and videos.

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[7] tENTATIVELY, a cONVENIENCE, <http://www.hi-beam.net/mkr/tac/tENTPXL2000.html>.

Juniper Woodbury's *Flowers*

Nine-year old Juniper Woodbury is another user who shoots in the purist

mode although she does not see herself or her videos as making any

statement about the format. Woodbury uses the technology at her

disposal—an unmodified PXL 2000 camera—and works within its

limitations. Her shorts *Flowers* and *Marker* include close-ups of well-lit

objects and very few, if any, cuts. The soundtrack consists of her own

commentary, recorded directly on camera. These videos have a

freshness informed by Woodbury's own youth, and were an audience

favorite at PXL THIS 13, an edition of the festival that includes works of

varying levels of sophistication. Videos shot in the purist mode may be

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trying to make some sort of statement about the format or about

technology, or they may be a result of a user taking advantage of

whatever technology was at hand.

Even in the early days of Pixelvision, artists were interested in pushing the

technical boundaries of the camera. The purist standpoint, while

recognized, never gained much traction with artists who were attracted to

cinematic effects or basic conventions such as a non-diegetic

soundtrack. None of the filmmakers I interviewed would admit to being a

purist, although some did admit to having purist tendencies. Filmmaker

Dwight Swanson appreciates the purist sentiment "of leaving it as rough

and pure as possible," but recognizes that his approach changed when

he gained access to digital editing equipment. Swanson used to edit in

camera or on a consumer VHS machine. He recognizes that his shots

have become much shorter and his cutting much faster since he began

editing digitally. When editing in camera, longer shots make sense

because the transitions between shots can be abrupt, and they occur

with accompanying visual noise.

The Pixelvision purist is perhaps a mythical character among the artists

and users I interviewed. The people I met had modified their camera, and

their practice, to accommodate new technologies. However, the mythical

purist is a useful and necessary figure within a community of practice that

bridges the analog and digital divide. Pixelvision users can compare their own practices to those of the purist in order to contextualize changes in the technology and to justify changes in their own approach. The purist exists as a yardstick to measure how much Pixelvision practice has changed.

The PXL Manifesto

Although they are not identified as such, Pixelvision purists are referenced in the short video *PXL Manifesto*, directed by Ross Craig. The PXL Manifesto is a tongue-in-cheek enumeration of Pixelvision conventions put forth "in order to preserve the artistic integrity and the visual and aural purity of the original PXL 2000 camera."[8] Ross Craig, and his brother Steve, appear in the video as the Juxtabrothers, appear as the arbiters of Pixelvision taste, embracing all that is "pure" (and analog) about the camera. Some of the principles of the PXL Manifesto include shooting on audiocassette for the length of one tape, editing in camera and allowing no additional sound or sound processing.

The PXL Manifesto is amusing because the Juxtabrothers deliver their dogmatic message in a deadpan and humorous manner. They outline each principle, which is then undermined by accompanying digital effects or by the brothers' own hurried conferencing about exceptions or

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[8] *PXL Manifesto*.

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Ross and Steve Craig as the Juxtabrothers in *PXL Manifesto*

additions to the rules. The brothers are cognizant of Pixelvision's past

history and identity in the art world, and this is at the heart of their

parody. They decry artists with "big bucks" and "$50,000 Avid editing

systems," who are interested in using the PXL 2000 to make "cute little

art film[s]." Aside from Pixelvision's own identity issues, the brothers are

also mocking the Dogma '95 movement,[9] which had its own manifesto

outlining an approach to filmmaking with no special effects, added sound

[9] The Dogma '95 movement was developed by a collective of Danish filmmakers who adopted a cinematic "vow of chastity," a set of rules designed to bring a sense of simplicity back to the art of filmmaking. They eschewed artifice such as post-production effects, artificial lighting and non-diegetic sound. See the Dogma '95 Web site at <http://www.dogme95.dk/>.

A hand-written title from Sadie Benning's *A Place Called Lovely* (1991)

or Hollywood artifice. The brothers refer several times to capturing the "honest truth" in the camera and not adulterating it with added effects.

The PXL Manifesto also references Pixelvision's association with low-budget filmmaking. The brothers celebrate the "purity" of low-budget films and declare that Pixelvision films should not have a budget at all (aside from "maybe a catering budget"). The visual conventions noted in the PXL Manifesto refer to titling and in-camera editing. A beloved characteristic of early Pixelvision videos, notably those of Sadie Benning,
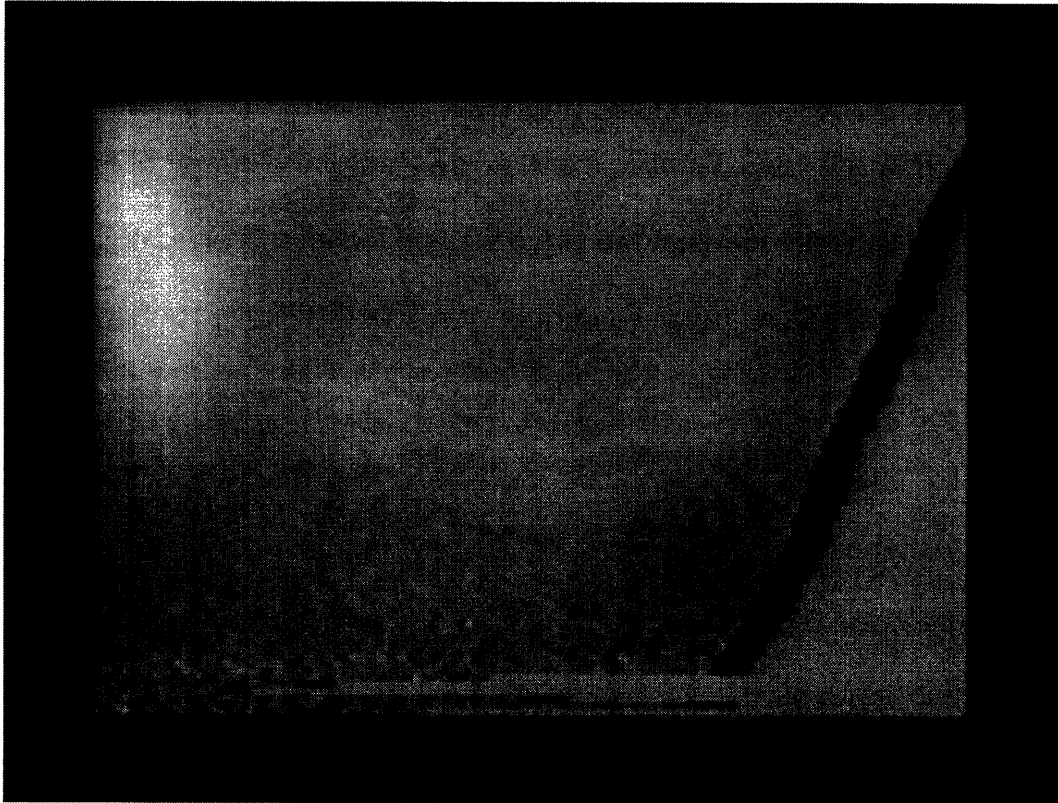
A noisy analog edit from *PXL Manifesto*

is the use hand-written titles. The titles are most often done in magic

marker on paper, and held up to the camera. Benning uses titles like this

in *A Place Called Lovely* (1991) and her other early works, as do other

users who shoot in camera without the aid of digital titles, including

Juniper Woodbury. The PXL Manifesto demands all titles to be

handwritten. One of the other directives that the brothers set forth is that

of in-camera editing. In-camera edits in Pixelvision videos are distinctive

because they appear as a visible jagged line cutting across the screen, a

visible result of pressing the stop button on the camera recording

mechanism. These edits are an artifact of the in-camera editing process,

and are quickly disappearing from today's digitally-edited pieces. The Juxtabrothers include one of these edits between each of their directives; as such, they are very identifiable and noisy. Part of the humor of *PXL Manifesto* lies in the fact that the video was edited and finished digitally. The analog edits were imported into the "dreaded" digital editing system.

The *PXL Manifesto* is laced with irony about the conventions of making videos with the PXL 2000 camera. While the brothers are issuing their instructions about sound, which forbid added sound processing, digital audio effects render the soundtrack almost incomprehensible.[10] Just about every directive enumerated by the brothers is formally subverted in some manner. The short is funny, but it is also a sophisticated take on the evolving practices of Pixelvision use. The brothers are poking fun at the conventions that develop in the filmmaking world, whether it is the world of Pixelvision or of Dogma '95. The development of any sort of conventions surrounding Pixelvision is somewhat ironic, in that shooting with the PXL 2000 is often seen as a way to escape the strict conventions of the larger filmmaking world. In *PXL Manifesto*, the Juxtabrothers point this out with a touch of humor and formal subversiveness.

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[10] The soundtrack of a tape shot in the PXL 2000 camera will contain an audible hum, which is the sound emitted by the motor running the camera's recording mechanism. Some users tend to like this noise (the purist viewpoint), while others seek ways to eradicate it. This hum is not noticeable in *PXL Manifesto*.

Exploiting the Lens

Filmmakers, when setting out to make a Pixelvision piece, try to exploit what is unique about the PXL 2000 camera. By most accounts, this feature would be the infinity focus lens. This extreme wide-angle lens has the ability to capture most anything in focus, whether millimeters from the camera or very far away. The lack of distortion in objects close to the lens is striking, and it is the close-up that, to many, defines Pixelvision. Artist Erik Saks says, "[Y]ou can get up close to your subject whether it is an inanimate object or a person because that, in particular, is the sweet zone of what looks good in Pixelvision—being close to things."[11]

Many videos utilize the distinctive Pixelvision close-up, especially those that feature toys in front of the lens.[12] Peggy Ahwesh's *Strange Weather* is another work that employs the close-up at various points, including a scene in which the main character's face is photographed at very close range while she talks on the telephone. Michael O'Reilly's *Glass Jaw* has several striking close-ups, including one that clearly shows the ridges and swirls of O'Reilly's fingertip, as it is held up to the lens. Some pieces use the close-up only occasionally in order to draw attention to an object. Other works, like Stephen Rose's *Souvenir*, depend on the close-up as a formal device. *Souvenir* is a video that takes place within a souvenir snow

[11] Saks, interview.
[12] These works are discussed further in chapter one.

Ahwesh makes use of the close-up in *Strange Weather* (1993)

globe. The creatures within the globe are shot in such a way as to look

full-sized with no visible distortion. The success of the narrative depends

on the extreme close-up; the tiny figures within the snow globe must be

believable and appealing at close range in order for Rose's conceit to

succeed.

As discussed in chapter four, many filmmakers and circuit benders refuse

to modify the lens. They feel strongly that the lens is a technical

achievement and a visual marker of the format. David Riddle, who

modifies professional equipment, is not a fan of the PXL 2000. Yet Riddle

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does believe, however, that the lens is the only element of the Pixelvision aesthetic that cannot be mimicked in post-production, and that it is the only "unique" element of the camera.[13] Some viewers look for shots that exploit the lens either as an intrinsic part of the narrative, as in *Souvenir,* or use the close-ups as part of their visual language. According to these viewers, the works that exploit the lens are the most successful Pixelvision films.

Michael Almereyda's short, *The Rockinghorse Winner*, is an aesthetically beautiful piece shot entirely in Pixelvision. It has received much acclaim, but also some criticism from other Pixelvision artists because it does not exploit the camera's extreme depth of focus. Although the film does include some close-ups, it is more successful at exploiting the Pixelvision aesthetic to create an atmosphere. Almereyda's technique in *The Rockinghorse Winner,* and in his other films, is indicative of differences in approach among Pixelvision filmmakers. Some filmmakers, like Almereyda, are clearly enamored of the camera for its black and white, low-res aesthetic, while others are more fascinated by the specifics of the technology such as the infinity focus lens. Which factor is more integral to the identity of the camera is an issue for debate.

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[13] Riddle, interview.

Altered States

As a way to integrate the Pixelvision aesthetic into the narrative of a story, some filmmakers choose to use Pixelvision footage as a way to portray an altered state, a fantasy world or a world otherwise divorced from the present day. Artist Erik Saks believes that the Pixelvision image has a timeless quality to it. Saks say: "For someone who doesn't know about Pixelvision and encounters something made with it, it has a timeless quality they can't place unless the video itself contains a cultural reference."[14]

The most well-know example of Pixelvision representing an altered or otherworldly state is Michael Almereyda's film *Nadja* (1994). In this film, Almereyda uses Pixelvision footage to depict the world as seen through the eyes of a vampire. This film is shot in both 35mm film and Pixelvision, with the traditional 35mm film used to represent the everyday world of the film's characters. Though her appearance is quite human, Almereyda's vampire is marked as different throughout the film. The way she perceives the world, in black and white Pixelvision, is a way to visualize her difference and to intensify the atmosphere of the film. In *Nadja*, Pixelvision is used to further the gothic aesthetic of the vampire storyline. The same sort of gothic atmosphere pervades Rose's *Souvenir*. In

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[14] Saks, interview. See chapter three for a discussion of Pixelvision as a cultural reference in commercial films.
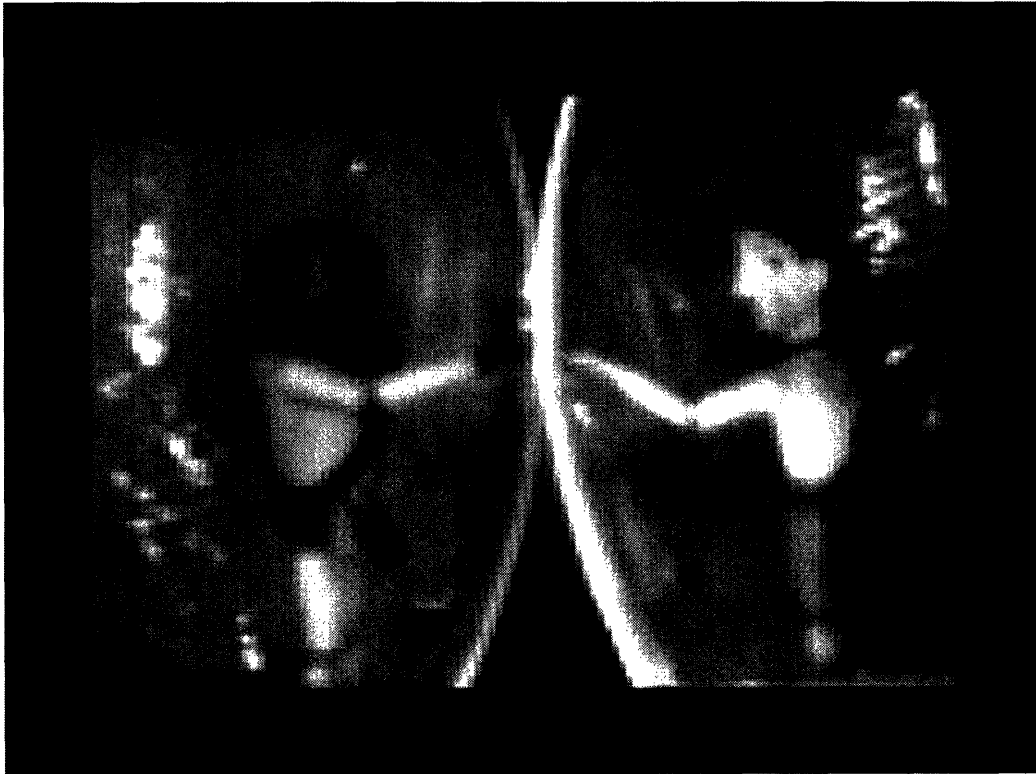
Stephen Rose's *Souvenir*

Souvenir, the viewer is brought into another world, the world of a solitary creature longing for connection. This otherworldly aesthetic, as well as the use of extreme close-ups, work with other filmic strategies to give the film a feeling of eerie otherworldliness. As the camera pulls back, we are shown that the world depicted by Rose actually exists inside a souvenir snow globe.

While the Pixelvision aesthetic is more flexible than the above works might suggest, it is clear that the Pixelvision image can enhance the depiction of other worlds and other times, depending on the vision of the

filmmaker. In the popular press, the adjectives most often used to describe Pixelvision are "gothic", "dreamy" and "otherworldly." Artist Sadie Benning believes that Pixelvision has a quality that she equates with a distant past:

> "There is something about the quality of the image that is really dreamlike and it has a feeling of being in the past already even though you just shot it. It is not quite reality or not quite representational of what's really happening at that moment, so it already has this distancing effect of feeling like it's already in the past somehow."[15]

This atmospheric strategy is used in pieces that mix formats, as well as those shot exclusively in Pixelvision. However, it may not always be another world that is depicted in the Pixelvision footage. Filmmakers may choose to shoot in Pixelvision because they seek an image that is one step removed from the everyday realism of broadcast-quality video. Filmmaker Michael Possert calls Pixelvision the "anti-DV." Possert believes that the dearth of visual information in the Pixelvision image, as compared to the conventional digital image, serves to draw the viewer in to the image, forcing them to immerse and engage on a deeper level.[16] Finally, though Pixelvision may lend a certain atmosphere of otherworldliness, this does not preclude the use of the format in documentary videos or other works depicting "real" life. Pixelvision, like any other format, is at the service of the user, and his or her vision

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[15] Benning, interview.
[16] Possert, interview.

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What is PXL?

As it evolves, Pixelvision practice reflects a constant tension between modifications that push the boundaries of technology, and a Luddite spirit that celebrates the purist practices of the late 1980s. Modification allows users in the present to achieve effects that were all but impossible back in the day. Yet some users recognize that the analog quirks of the camera are somehow integral to the camera's identity, and worth bringing forward into the digital realm. Whether shot in camera or tweaked with digital tools, all of the works described above are Pixelvision films, and contain footage shot with the PXL 2000 camera. Yet in my research, I came across one short video that imagines a different use of the Pixelvision format. In *Homo Sapien*, Bryan Konefsky transfers Super 8 home movies to Pixelvision and then adds digital titles. The short retells the story of his early Super 8 filmmaking experiences in the late 1960s. A young Konefsky and his school friend are dressed up as cavemen on a hunt. His voiceover tells us the backstory of his Super 8 adventure, including how his friend's mother made their faces and gave them furs for their cavemen costumes.

Although the source material was not shot with the PXL 2000, *Homo Sapien* is still identifiable as a Pixelvision. In this short, Pixelvision serves as a support for other formats, in the same way that consumer video

formats translate everything from 35mm film to Pixelvision for the home market. Home movies are themselves often transferred to consumer video formats for easier access. In *Homo Sapien*, we go from one marginalized format (Super 8), to one that is even more marginal (Pixelvision). There is an additional level of format confusion, in that this short was actually released on VHS. We are three generations, and many years away from the original Super 8 source. Although Konefsky started out with analog source materials and made the transfer to Pixelvision, this short raises the specter of a digital future in which "Pixelvision" works are not actually shot in with a PXL 2000 camera. Is there a difference between videos shot in Pixelvision and works that mimic the Pixelvision look in post-production, through use of filters and effects? This is a question facing the wider filmmaking community as photographic film is increasingly replaced by digital formats. As filmmakers search for authenticity within the new digital realm, they may import analog artifacts such as the noisy analog edit, or they may leave the limitations of the analog camera behind as the format morphs into something else completely. As filmmakers struggle with these issues, the corresponding filmmaking conventions and terminology will shift and change.

Conclusion

Pixelvision is an analog format that has survived its own obsolescence as well as the initial transition to digital. In the present day, it serves two kinds of users: those who are interested in making films and videos within the medium-specific constraints of the analog, and those who are exploring a new digital aesthetic inspired by the old analog formats. Within Pixelvision, one finds a microcosm of the debate that is going on now in the larger film world as we transition from analog to digital, and it raises a lot of questions. How far will Pixelvision practitioners stretch the boundaries of the format to include experimentation with digital technology? Will Pixelvision and other analog formats lose their specificity to become little more than digital effects? Will Pixelvision survive only as a filter in the Final Cut Pro of tomorrow?

One reason for shooting in Pixelvision is that many artists do not find the look of digital video compelling. Compared to film, they find that DV looks too close to real life. When shooting in DV, many depend on digital editing effects to give them a look or an aesthetic that they find attractive or "authentic." There is a trend in digital editing software to provide a filter

to give DV a film look—adding flicker and grain, for example—or even to transform the DV look into that of very old film, complete with fake deterioration and scratches on the emulsion. In the digital age, analog has come to represent authenticity, perhaps because viewers are aware of the manipulation that digital technology makes possible. An effect that simulates the Pixelvision look is currently available on the Internet for the iMovie editing system, and there is talk of similar software becoming available for Final Cut Pro, an editing system very popular with independent filmmakers and video artists.

When I told one of the filmmakers about the Pixelvision simulation software, his first reaction was that the software represented "the beginning of the end"[1] for Pixelvision. However, advances in digital software have not yet changed the minds of filmmakers who feel strongly about capturing as much of the aesthetic as possible in the camera, instead of searching for a look in their editing software. Artists often complain that they can tell the difference between effects done in the camera and those applied later on; they preferred, on the whole, to capture their effects on the front end: if you want your image to look like film, why not shoot on film? As another filmmaker put it, "why make one medium do something it doesn't naturally do?"[2]

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[1] Cassidy, interview.
[2] Konefsky, interview.

The nature of a medium is a vexed question, because it is impossible to consider the medium apart from its users, their social context and the larger culture. Early film theorists like Siegfried Kracauer theorized about the nature of film as a photographic media ideally positioned to capture reality and to discover truths about the world around us. Yet Kracauer's position does not do justice to those artists not inclined to work in the realist mode. What Kracauer saw as a perversion of the medium, others saw as great art. As a video format, what does Pixelvision "naturally do," and when does an image cease to be Pixelvision? Many artists working with digital images look to analog media to determine a look for their work. Imported analogical noise has become one tool for artists looking for a sense of authenticity for their digital images. In the new digital medium, which can be manipulated to look like anything, authenticity and medium specificity continue to be touchstones for artists making the transition to the digital image. It is a classic case of remediation, in which one media form borrows the characteristics and aura of another.

The development of digital editing and the rise of digital technology represent a crisis of the image that many filmmakers are just now facing. As technology advances and older formats become prohibitively expensive or obsolete, artists may no longer have the option to capture their effects in camera. When faced with the prospect of editing with the

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new digital software, one filmmaker wonders if it "betrays the spirit of

Pixelvision:"

> "The point of shooting with Pixelvision, to me, is the
> back to the basics feel. Mixing it up with more
> complicated techniques is perhaps a betrayal. It's almost
> a moral issue— at some point, it ceases to be
> Pixelvision, even if you make it look like Pixelvision. I
> downloaded the iMac plug-in...but then, if you can do
> that, then why bother with [Pixelvision] at all? [3]

With digital editing software, it is important to consider the range of

effects available to the user. When faced with endless possibilities for

manipulating the image, why bother to simulate Pixelvision exactly? One

could simply choose effects to suggest Pixelvision, or one could create a

look that marries Pixelvision to another aesthetic. The limitations of the

PXL 2000 camera no longer apply, and the image can be manipulated at

will. This is both the great promise and the great danger of the digital

image, and spells the end of the medium-specific aesthetics that have

defined filmmaking in the twentieth-century.

Whether obsolescence, scarcity or digital software will prove to be the

demise of the Pixelvision movement remains to be seen. It is possible

that Pixelvision use will have a lifespan roughly equal to those artists who

connected to it in its late-twentieth century heyday. Many of the artists

that I interviewed, however, believe that the attraction of the PXL 2000

image will continue to draw interest among a small community, for as

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[3] Swanson, interview.

long as the cameras are viable. One artist believes that others might continue to create in this niche format when they are seeking a "particular way of looking at the world."[4] And other artists agreed that there is a sense of freedom, play and satisfaction from working with the PXL 2000 that cannot be matched by even the most high-end digital software suites. Gerry Fialka says, "Pixelators return to innocence by using, and even misusing, moving image art to view worlds that usually go unnoticed, evoking children's spirited desire to explore."[5] In the end, it seems as if some of the satisfaction from shooting in Pixelvision comes from the process, and the unexpected result of shooting with what some would consider unusual tool—a tool that began its life as a cheap, plastic toy designed for children.

The Academy Film Archive in Los Angeles, California has made an effort to accession all of the Pixelvision films submitted annually to the PXL THIS festival. This collection is probably the largest publicly accessible collection of Pixelvision films. The Academy sees the PXL THIS films as a valuable addition to their avant-garde and experimental film collection. Archivist Snowden Becker says:

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[4] O'Reilly, interview.
[5] Lafong, "The Toy that Won't Quit," <http://www.indiespace.com/pxlthis/articles.phtml#lafong>.

> "The name of the Academy brings a certain imprimatur of distinction to the materials, and a sense of legitimacy that it might be hard for otherwise unknown filmmakers to get. By bringing them here we are not necessarily endorsing the work. These people have had sense enough to get their materials to a place where it can be held by the Academy, and they are, as a result, part of motion picture history."[6]

The collection gives researchers a valuable sense of the diversity of practice within one minor format, and how the practice evolved along with technology. It is important for Pixelvision works to be preserved in order to document the ways this format was used by artists and amateurs working in the transitional period of the late twentieth century and beyond.

In an age of advancing technology, a toy video camera has made its way from avant-garde practice to commercial productions, from analog obsolescence to the digital editing suite. All the while, this simple tool has also served as a means for artistic expression, one that brings us back to the beginnings of moving image art. Filmmaker Bryan Konefsky makes this connection as he expresses his belief in the value of Pixelvision shorts as well as shorts in other small formats:

> "These formats undermine the Hollywood stranglehold on our cinematic voice, our cinematic memory, what movies might be, what movies should be or shouldn't be. Why is it that movies necessarily have to cost millions and millions of dollars? A little one-minute, shot-

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[6] Becker, Snowden, interview.

in-camera, edited-in-camera piece can be as profound as any Hollywood film."[7]

These compelling short videos by amateurs and artists are at the heart of Pixelvision practice and will continue to be, for the foreseeable future. Though never pervasive, Pixelvision demonstrated the attraction of inexpensive consumer video tools even before the advent of today's affordable prosumer technology. Many years later, this obsolete camera remains a marginalized but viable tool, dismissed by mainstream culture but celebrated by artists and amateurs who have found their creative voice through its lens.

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[7] Konefsky, interview.

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Online Resources and Web Sites

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